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ABSTRACT

The report summarizes findings from a 3-year national self-study of the profession of speech-language pathology and audiology. The study followed a four-phase timeline; (1) identification of clinical-educational needs of the communicatively handicapped (traditionally served speech and language impaired individuals as well as those with other handicaps); (2) analysis of competencies needed by speech pathologists and audiologists; (3) analysis of discrepancies in competencies of existing speech, language, and hearing personnel; and (4) development of recommendations for preservice and inservice training. Project objectives for each of the four phases are enumerated and progress or accomplishment in meeting each objective is described. A summary of recommendations from the self-study touches on 10 issues: undergraduate education, graduate education, professional doctorate, interface of students with those in other disciplines, preparation of students to serve in a variety of settings, preparation of speech-language pathologists and audiologists for a changing society, specialty certification, continuing education, research, and advanced technology. The bulk of the report is composed of nine appendixes, including a report of findings from the competency survey; and papers from a national conference on undergraduate, graduate, and continuing education. (CL)

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FINAL REPORT

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY: AN EDUCATIONAL PERSPECTIVE FOR THE FUTURE

Grant #G008001676

SPECIAL EDUCATION PROGRAMS

Division of Innovation and Development

Submitted by:

Trudy L. Snope, M.A.
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AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

June 30, 1983

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ACKNOWLEDGEMENTS

ACKNOWLEDGEMENTS

Many individuals have made significant contributions to the three year national self-study of the profession of speech-language pathology and audiology. We are particularly grateful to the Professional Self-Study Project Advisory Committee members who were responsible for overseeing the self-study throughout the needs identification, needs analysis, discrepancy identification, and discrepancy reduction phases. A steering committee, made up of subcommittee chairs Noel Matkin, Norma Rees, Robert Ringel and Trudy Snope, maintained overall responsibility for the self-study. The Advisory Committee members were:

Patrick J. Carney, Ph.D.
Professor, Department of Audiology
and Speech Pathology
University of Tennessee
Knoxville, Tennessee

Eugene B. Cooper, Ed.D.
Chairman, Department of
Communicative Disorders
University of Alabama
University, Alabama

Francine Dove
University of Maryland
Hyattsville, Maryland

Carol Ehrlich, Ph.D.
Director, Audiology and
Speech Pathology
Children's Hospital-Denver
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Norma S. Rees, Ph.D. (Chairman)
Vice Chancellor
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Dean, School of Humanities,
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Robert Screen, Ph.D.
Chairman, Department of
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Hampton Institute
Hampton, Virginia

Mary Lovey Wood, Ph.D.
Director
Austin Speech-Language-
Hearing Center
Austin, Texas

Phil[illegible] A. Yantis, Ph.D.
Professor, University of
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Department of Speech and
Hearing Sciences
Seattle, Washington

The participants in the ten Regional Study Groups deserve special thanks for their significant contributions. These persons consisted of parents of communicatively impaired children, adults with communicative impairment, speech-language pathologists and audiologists from public schools, private practice and clinics/ hospitals, persons from universities and representatives from public agencies. They determined the needs of the communicatively handicapped and developed recommendations for alleviating these needs.

The 3,000 speech-language pathologists and audiologists, directors of educational programs and supervisors of services who responded to the competencies surveys allowed the committee to determine strengths and deficiencies in the competencies of speech-language pathologists and audiologists. Based on the 1,000 individuals who responded to the research survey, the Basic Research Subcommittee determined the training needs of scientists and the scientific training needs of clinicians.

The 121 participants in the 1983 National Conference on Undergraduate, Graduate, and Continuing Education proposed a series of recommendations whereby current and future professionals can attain the competencies to allow them to appropriately serve communicatively handicapped persons.

The major credit for the successful completion of the project and the development of the conference proceedings is given to Trudy Snope, Project Director, Norma Rees, Committee Chair, and Steering Committee members Noel Matkin and Robert Ringel. Thanks are given also to project staff: Jerry Punch, who directed the project during its first year of implementation, Kathleen Griffin, who served as Project Administrator during that time, and David Fein, who offered invaluable assistance in the competencies survey design and analysis.

Appreciation is extended to Beverly Wellman Tucker, from the Department of Education, Special Education Programs Branch, who served as project officer, for her effort in assisting the self-study which will result in improved preservice and inservice training of speech-language pathologists and audiologists.

Finally, we are indebted to James B. Lingwall, Director of the Professional Affairs Department, who served as project administrator and provided valuable assistance to the project staff.

Frederick T. Spahr, Ph.D.
Executive Director
American Speech-Language-
Hearing Association

BACKGROUND

BACKGROUND

To remain viable and responsive to societal needs, all professions must engage in periodic self-assessment. The present study involved a three-year national self-study of the profession of speech-language pathology and audiology. Self-assessment allowed the profession to determine how appropriately it was responding to the needs of all communicatively handicapped individuals, so that these individuals may be assisted to function at their maximum potential.

The goals of the study, divided by phase, were to:

Phase I: Needs Identification (months 1-9)
Identify the clinical-educational services needed by the communicatively handicapped so that they can develop maximum competence in communication.

Phase II: Needs Analysis (months 10-12)
Define the competencies required by current and future speech-language pathologists and audiologists in order to provide full, appropriate services for all communicatively handicapped individuals.

Phase III: Discrepancy Identification (months 13-24)
Collect and analyze data from universities, service providers and supervisors to determine deficiencies in the competencies of speech-language pathologists and audiologists who have been trained to serve the communicatively handicapped.

Phase IV: Discrepancy Reduction (months 25-36)
Develop recommendations for preservice and inservice training which will enable speech-language pathologists and audiologists to acquire the necessary competencies to provide comprehensive service delivery programs.

This study examined the needs of the communicatively handicapped, including those who have been served traditionally as "speech-language impaired," as well as other handicapped individuals (mentally retarded, hard of hearing, deaf, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind, multi-handicapped, specific learning disabled, bilingual handicapped) who also have communication disorders. Although the primary emphasis was on the special needs of communicatively handicapped children (0-21 years), the self-study effort was designed to identify and ameliorate the common and unique needs of all communicatively handicapped persons by addressing six clinical service parameters: prevention, identification, assessment, remediation, evaluation of outcome, and administrative concerns across the continuum of age (preacademic, academic, and postacademic).

Where the service needs of the communicatively handicapped were determined to be addressed inadequately or not at all by the profession, the competencies required to remediate these needs were defined. Finally, educational recommendations were proposed whereby current and future professionals will be able to attain the skills necessary to address these needs.

The second way in which an expansion of scope has occurred arises from the recognition that service delivery to the communicatively handicapped necessarily presumes strong support from the training sector of the profession in the area of clinical research. Research is vital in meeting the profession's responsibilities in the areas of prevention, identification, assessment, and remediation of communicative disorders, and in the evaluation of service outcomes. Five additional members were appointed to the Advisory Committee to represent the research component of the profession. Travel expenses of these members to meetings of the Advisory Committee were funded by the American Speech-Language-Hearing Association, since the original proposal did not include their participation.

The last self-assessment completed by the profession of speech-language pathology and audiology occurred in 1963. The 1963 study, sponsored by the American Speech-Language-Hearing Association (ASHA), culminated in a national conference on graduate education. This effort resulted in the establishment of many standards and policies which guided graduate education in the profession for the past 20 years. It is apparent, however, that given the many changes that occurred in the 1970s, educational requirements established for the profession as a result of the 1963 conference may no longer be appropriate for the needs of the 1980s. Further, because the last self-study determined that the master's degree was to become the entry degree for the profession, it did not provide educational direction for the field in terms of undergraduate training. Since thousands of individuals currently serving the communicatively handicapped hold only the baccalaureate degree, the previous study, although significant, was not comprehensive. By contrast to the previous effort, the present study was field based and acknowledged specifically the two predominant educational degrees held by service providers, in addition to the professional doctorate.

The self-study was divided into four phases, each with observable outcomes. The entire project was overseen by an Advisory Committee made up of communicatively handicapped persons, parents of communicatively handicapped children, service providers, university faculty, a student representative, representatives of state educational agencies and supervisors of speech-language pathology and audiology services in local educational agencies.

The findings and recommendations resulting from this self-study will impact preservice and inservice training of speech-language pathologists and audiologists. Professionals who have competencies required to serve a diversity of individual needs and abilities will, therefore, provide more effective services for a greater number of the communicatively handicapped population. More appropriate services also will be provided so that these individuals are better able to realize their full communication potential.

PROJECT OBJECTIVES

The following activities were planned for the preimplementation period and the four phases of the project:

Preimplementation

1. Employ project staff.
2. Appoint Advisory Committee.

Phase I: Needs Identification (months 1-9)

1. Describe roles/responsibilities of the Advisory Committee relative to the study.
2. Conduct meetings to identify needs of the communicatively handicapped that must be addressed by the profession, if these children are to realize their full potential.
3. Prepare a list of the needs of communicatively handicapped children.
4. Solicit nominees for participation in Regional Study Groups.
5. Select study group members.
6. Evaluate Phase I.

Phase II: Needs Analysis (months 10-12)

1. Distribute Phase I Report to all Regional Study Group (RSG) participants.
2. Conduct orientation meeting for study group leaders.
3. Conduct Regional Study Group meetings.
    a. Review and expand needs that were identified in Phase I.
    b. Develop competency statements relative to how the needs can be addressed.
4. Prepare a final report that amalgamates work of all 10 groups.
5. Evaluate Phase II.

Phase III: Discrepancy Identification (months 13-24)

1. Develop survey instruments based upon the results of Phase II.

2. Identify survey respondents.

    a. Educational program directors.

    b. Supervisors

    c. Service providers

3. Collect data.

4. Conduct follow-up to improve response rate from respondents.

5. Analyze data from a variety of perspectives.

6. Define the needs of communicatively handicapped children that are not being addressed, or addressed adequately, by the profession.

7. Complete a report relative to Phase III.

8. Select and invite experts to attend the National Conference (Phase IV).

9. Evaluate Phase III.

Phase IV: Discrepancy Reduction (months 25-36)

1. Distribute report from Phase III to National Conference attendees.

2. Plan National Conference.

3. Conduct National Conference so that educational strategies for providing the profession with the competencies necessary to meet the needs of communicatively handicapped children are defined.

4. Evaluate the National Conference.

5. Prepare a summary report of professional competencies and educational recommendations.

6. Distribute report in 5 above.

7. Complete a final report of the project, including a compilation of the results of all four phases.

8. Evaluate Phase IV.

* * *

PROJECT PERSONNEL

PROJECT PERSONNEL

The following personnel were utilized to complete the project. Personnel listed include those who were funded in part or whole from grant funds and those participating as part of applicant contribution.

PROJECT ADMINISTRATOR

Kathleen M. Griffin, Ph.D., Director, Administrative Department and Deputy Executive Director served as Project Administrator from July, 1980 to October, 1980, at which time she was Director, Research and Professional Development Department. She was responsible for expediting administrative process, approving staff assignments and schedules, assisting the Project Director upon request, and participating as a technical advisor in completing each of the objectives.

Frederick T. Spahr, Ph.D., Executive Director, served as Project Administrator from October, 1980 to January, 1981. He assumed Dr. Griffin's responsibilities upon her appointment as Director, Administrative Department.

James B. Lingwall, Ph.D., served as Project Administrator from February 1, 1981 to the end of the project. He assumed Dr. Spahr's responsibilities upon his appointment to Director, Professional Affairs Department.

PROJECT DIRECTOR

Jerry L. Punch, Ph.D. served as Project Director from July, 1980 to July, 1981. He was responsible for ensuring that all objectives of the project were carried out as specified in the final report. When he assumed responsibilities as Director of the Research Department, Trudy Snope, M.A. was employed as Project Director. She assumed the responsibility for ensuring that all project objectives were met.

PROJECT MANAGER

Trudy Snope, M.A. served as Project Manager from July, 1980 to July, 1981. She worked under the direction of the Project Director. She was responsible for coordinating and conducting the Regional Study Group meetings, Advisory Committee meetings, writing and disseminating product reports and assisting the Project Director to ensure that all project objectives were met. In July, 1981 she assumed the responsibilities of Project Director and David Fein, M.A. was employed as Project Manager. He was responsible for conducting surveys in conjunction with the Project Director.

OTHER PERSONNEL

Advisory Committee

The Professional Self-Study Advisory Committee members were responsible for overseeing the self-study throughout its four phases.

Members of the Committee were:

Patrick J. Carney, Ph.D.
Professor, Department of Audiology
and Speech Pathology
University of Tennessee
Knoxville, Tennessee

Eugene B. Cooper, Ed.D.
Chairman, Department of
Communicative Disorders
University of Alabama
University, Alabama

Francine Dove
University of Maryland
Hyattsville, Maryland

Carol Ehrlich, Ph.D.
Director, Audiology and
Speech Pathology
Children's Hospital-Denver

Gerald Freeman, Ph.D.
Oakland University
Rochester, Michigan

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Theodore J. Glattke, Ph.D.
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Norma S. Rees, Ph.D. (Chairman)
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University of Wilsconsin-Milwaukee
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Robert L. Ringel, Ph.D.
Dean, School of Humanities,
Social Science and Education
Purdue University
West Lafayette, Indiana

Robert Screen, Ph.D.
Chairman, Department of
Communicative Disorders
Hampton Institute
Hampton, Virginia

Mary Lovey Wood, Ph.D.
Director
Austin Speech-Language-
Hearing Center
Austin, Texas

Phillip A. Yantis, Ph.D.
Professor, University of
Washington
Department of Speech and
Hearing Sciences

Regional Study Group Participants

The parents of communicatively handicapped children, adults with communicative impairment, speech-language pathologists and audiologists from various service settings who participated in the ten Regional Study Groups determined the needs of the communicatively handicapped and developed recommendations for alleviating these needs.

National Conference Participants

The 121 participants, professionals representing schools, hospitals, clinics, private practice and universities, in the 1983 National Conference on Undergraduate, Graduate and Continuing Education, proposed recommendations whereby current and future professionals can attain the competencies necessary to allow them to appropriately serve communicatively handicapped persons.

YEAR ONE OBJECTIVES

July 1, 1980 - June 30, 1981

YEAR ONE

1980 - 1981

OBJECTIVES

PREIMPLEMENTATION

1. Employ project staff
2. Appoint Advisory Committee

PHASE I: NEEDS IDENTIFICATION (MONTHS 1-9)

1. Describe roles/responsiblities of the Advisory Committee relative to study.

2. Conduct meetings to identify needs of the communicatively handicapped that must be addressed by the profession if these children are to realize their full potential.

3. Prepare a list of the needs of communicatively handicapped individuals.

4. Solicit nominees for participation in Regional Study Groups.

5. Select study group members.

6. Evaluate Phase I.

PHASE II: NEEDS ANALYSIS (MONTHS 10-12)

1. Distribute Phase I Report to all Regional Study Group (RSG) participants.

2. Conduct orientation meeting for study group leaders.

3. Conduct Regional Study Group meetings.

    a. Review and expand needs that were identified in Phase I.

    b. Develop competency statements relative to how the needs can be addressed.

4. Prepare a final report that amalgamates work of all 10 groups.

5. Evaluate Phase II.

PREIMPLEMENTATION

OBJECTIVE 1: Employ project staff

Kathleen M. Griffin, Ph.D. was appointed Project Administrator in July, 1980. James B. Lingwall, Ph.D., was appointed Project Administrator, effective February 1, 1981, replacing Dr. Kathleen M. Griffin. Dr. Lingwall is the Director of the Professional Affairs Department of the American Speech-Language-Hearing Association. Trudy Snope, M..A., was appointed Project Director, effective October 1, 1981, replacing Jerry L. Punch, Ph.D. David Fein, M.A., was appointed Project Manager, effective October 15, 1981.

OBJECTIVE 2: Appoint Advisory Committee

A 15-member Advisory Committee was appointed prior to the first meeting in September, 1980. Two additional members were subsequently appointed to provide improved representation in the area of language disorders. The addition of five researchers resulted in a total of 22 appointments. Norma S. Rees, Ph.D., then Dean of Graduate Studies at the City University of New York (CUNY), and currently Vice Chancellor, University of Wisconsin at Milwaukee, was designated Chairman of the Committee.

During the course of the project, a subcommittee structure was formed whereby the various goals of the project could be met efficiently and orderly transitions could be made from one phase to another. Six subcommittees, comprised of overlapping membership, resulted from the finalized structure. The chairmen of these subcommittees comprised a Steering Committee for the project.

PHASE I: NEEDS IDENTIFICATION

OBJECTIVE 1: Describe roles/responsibilities of the Advisory Committee relative to the study.

At the September, 1980 Advisory Committee meeting, the Project Director summarized the self-study grant proposal and reviewed the roles and responsibilities of the Advisory Committee over the three-year period. The self-study was described by noting the critical issues and basic questions addressed by the project, explaining the meeting and evaluation components, and identifying the phases of study, participants and products to be generated. A list of specific responsibilities of the Advisory Committee by phase was distributed to Committee members.

OBJECTIVE 2: Conduct meetings to identify needs of the communicatively handicapped that must be addressed by the profession if they are to realize their full potential.

Three meetings of the Advisory Committee were held during Phase I, the first at the ASHA National Office, the second in conjunction with the ASHA Annual Convention (Detroit, Michigan), and the third in Bethesda, Maryland.

A number of subobjectives, some involving planning activities related to Phase I and subsequent phases, was completed during these meetings. Specific objectives and accomplishments of these meetings are reported below.

OBJECTIVE 3: Prepare a list of the needs of communicatively handicapped individuals.

The Committee developed a three-dimensional model as a guideline in defining the service needs of the communicatively impaired. The three parameters of the model included six service functions (prevention, identification, assessment, remediation, evaluation of outcome and administration, two service needs areas (core needs and unique needs), and three levels along a continuum of age (preacademic, academic, and postacademic).

OBJECTIVE 4: Solicit nominees for participation in Regional Study Groups (RSGs).

The Advisory Committee determined that the composition of each Regional Study Group would be as follows: (a) four parents of communicatively impaired children, (b) two adults with communicative impairment, (c) three practitioners, one from the public school sector, one from the private practice sector, and one from the clinic/hospital sector, with one of these three persons being a Program Director, (d) three persons from training institutions, one an administrator, one a researcher, and one a clinical supervisor, and (e) one representative from a public agency, either a local or state education agency. Each Regional meeting, therefore, involved 13 participants. Each group included both speech-language pathologists and audiologists, and the practitioners included those in professions outside audiology and speech-language pathology.

Approximately 325 solicitations for nominations were mailed in early October, 1980, to state speech-language-hearing associations, state departments of education, university educational programs, and local education agencies.

OBJECTIVE 5: Select study group members.

Membership in the ten regional groups was ratified for a preliminary group of participants by the Advisory Committee at its second meeting in November 1980. Remaining members were selected by the project staff in accordance with the criteria for composition noted above.

A set of discussion questions was developed to be used by RSG participants as a preliminary basis for discussion. Pre-meeting materials included a statement of charge to the participants, the set of discussion questions, the agenda, an Asha article (October, 1980) describing the Self-Study Project and three ASHA brochures (consumers only) to be used as additional orientation to the profession.

A set of materials was developed for distribution to the RSG facilitators in separate packets prior to the meetings. This material included a cover letter containing suggestions for local contact persons; a statement of charge to the facilitators; a tentative agenda; a transparency of the revised three-dimensional model; specific suggestions compiled for facilitators; the materials developed for participants and local contact persons; a list of participants, with categories noted; and copies of correspondence relating to the nomination and selection of meeting participants. Materials developed for distribution to facilitators and participants at the meeting included the final agenda; a list of participants; a name badge; a form on which to list the categories represented by participants; writing supplies; meeting evaluation form; place card with name; and travel voucher (for reimbursement purposes).

OBJECTIVE 6: Evaluate Phase I

A Phase I Evaluation Form was distributed to all members of the Advisory Committee following the meeting of February 1981. The results indicated that committee members rated the success of the project's first phase as satisfactory. Of the total number of responses, 94% were in the "very satisfactory" or "moderately satisfactory" categories. Overall, these results suggested that the goals of the project and their implementation were viewed favorably by members of the Advisory Committee.

PHASE II: NEEDS ANALYSIS

OBJECTIVE 1: Distribute Phase I Report to all Regional Study Group (RSG) participants.

A report of the input received from representatives from within and outside the profession regarding the service needs of the communicatively handicapped was distributed to members of the Advisory Committee, and the material was later compiled into summary form for use in developing discussion questions for the Regional Study Group meetings. The Advisory Committee concluded that the entire report should not be distributed to Regional Study Group participants in Phase II. This decision was made in the belief that such action might bias the participants, impose a limitation on their discussion, and possibly lead to a reduction in overall input relative to regional needs.

OBJECTIVE 2: Conduct orientation meeting for study group leaders.

A member of the Advisory Committee served as facilitator at each meeting and a project staff member (Director or Manager) served as recorder, with the facilitator and recorder comprising a Conference committee having the responsibility for compiling a report of each meeting.

During the February, 1981 Advisory Committee meeting, the facilitators developed the substantive and logistic aspects of the Regional Study Group meetings.

OBJECTIVE 3: Conduct Regional Study Group meetings.

Regional Study Group meetings of two days duration were held within each of the ten federal regions. A member of the Advisory Committee served as facilitator at each meeting; a project staff member served as recorder. The project staff member and facilitator compiled a report of each meeting. Each report consisted of a capsulation of the service needs in the areas of prevention, identification, assessment, remediation, evaluation of outcome and administration. In addition, the reports included recommendations/competencies for alleviating the needs.

Members of the Regional Study Groups included parents of communicatively impaired children; adults with communicative impairment; service providers from public schools, private practice, and clinic/hospital settings; persons from educational institutions including program directors, researchers, and clinical supervisors; and representatives from either local or state agencies. Thirteen persons were invited to participate in each meeting. Each group included both speech-language pathologists and audiologists. The service providers also included those in related professions such as psychology, nursing, special education and reading.

Each study group participant was given a meeting packet which included an agenda, a charge, a model for considering service delivery needs and an evaluation form.

The charge to the participants was to determine competencies that should be developed by current and future speech-language pathologists and audiologists to meet clinical service needs by:

1. Identifying, with regional considerations included, the met and unmet communicative needs of the preschool, school age, and adult individual with respect to six areas of professional endeavor (prevention, identification, assessment, remediation, evaluation of outcome, and administration), and

2. Developing recommendations for alleviating the unmet needs.

The participants appreciated the opportunity to discuss issues relating to the needs of the communicatively impaired with a heterogeneous group. The input from the adults with communication impairments and the parents of communicatively impaired children was especially valuable.

Each Regional Study Group determined the communicative needs of the preschool, school age and adult individual with respect to prevention, identification, assessment, remediation, evaluation of outcome and administration. The groups also developed recommendations for alleviating the needs.

The facilitator and project staff then prepared each report and sent it to the appropriate Regional Study Group members for review. The evaluation of the meetings is discussed in the section, "Evaluate Phase II."

OBJECTIVE 4: Prepare a final report that amalgamates work of all ten groups.

The Regional Study Group facilitators and the Clinical Applied Subcommittee met in Denver, Colorado on June 20-21, 1981. The purposes of the meeting were to 1) eliminate the redundancy in the ten regional reports; 2) identify specific regional concerns; and, 3) develop a master report of the Regional Study Group meetings.

Each of the ten Regional Study Group reports listed not only critical service needs of the communicatively impaired, but also research needs and training needs. The subcommittee decided to include only clinical needs in its Master Report since the objective of the subcommittee was to "determine the clinical service needs of the communicatively handicapped." The report addressed needs in the areas of prevention, identification, assessment, remediation, evaluation of outcome, and administration.

Research needs and training needs were analyzed and summarized in separate reports. Some unmet needs were regional in nature and were categorized as follows: family involvement concerns, multidisciplinary concerns, public education concerns, service program concerns, and commonly neglected concerns.

OBJECTIVE 5: Evaluate Phase II.

Each participant in the ten Regional Study Groups completed an evaluation of his/her study group meeting. In general, the evaluations were very positive. Most participants (99.2%) felt that the contributions of the other participants were helpful. Ninety-five percent (95%) of all participants agreed or strongly agreed that the facilitator was effective in leading the meeting. The professional interaction with a variety of professionals and the consumer input were particularly beneficial.

In addition to the Regional Study Group members' evaluations, the facilitators (all of whom were Advisory Committee members) evaluated the project's second phase. Most of the objectives were rated as very satisfactory or moderately satisfactory. Since the Regional Study Group participants determined competencies indirectly by identifying communicative needs and developing recommendations for alleviating the needs, 40% of the facilitators felt that the development of competency statements was unsatisfactory. The development of competency statements was furthered addressed by the Competencies Subcommittee as described in Phase III: Discrepancy Reduction: Objective 1.

YEAR TWO OBJECTIVES

July 1, 1981 - June 30, 1982

YEAR TWO
1981 - 1982

OBJECTIVES

PHASE III: DISCREPANCY IDENTIFICATION (MONTHS 13-24)

1. Develop survey instruments based upon the results of Phase II.
2. Identify survey respondents.
    a. Educational program directors
    b. Supervisors
    c. Service providers
3. Collect data.
4. Conduct follow-up to improve response rate from respondents.
5. Analyze data from a variety of perspectives.
6. Define the needs of communicatively handicapped individuals that are not being addressed, or addressed adequately, by the profession.
7. Complete a report relative to Phase III.
8. Select and invite experts to attend the National Conference (Phase IV).
9. Evaluate Phase III.

PHASE III: DISCREPANCY IDENTIFICATION

OBJECTIVE 1. Develop survey instruments based upon the results of Phase II.

Research Survey

The Basic Research Subcommittee met in Denver, Colorado on June 22-23, 1981. The purposes of this meeting were to: (1) develop the final survey on the research training needs of scientists and clinicians, (2) determine respondents to the survey and procedures for dissemination, (3) assign responsibilities for analysis and summarization of survey results, and (4) determine the timetable related to these responsibilities.

The committee reviewed and finalized the survey on research training needs. The survey was sent to directors of training programs, American Speech-Language-Hearing Association (ASHA) Fellows, ASHA researchers, practicing audiologists, practicing speech-language pathologists, university/college teachers and clinical supervisors.

The Executive Board approved the use of ASHA funds to conduct and analyze the survey. The National Office staff printed and disseminated the survey while the programming and analysis were conducted at Purdue University.

After piloting the survey with 50 persons, it was modified and then distributed to 5,000 individuals including directors of training programs, ASHA Fellows, speech-language pathologists and audiologists, university/college teachers and clinical supervisors.

Competencies Surveys

A two-day meeting of the Competencies Subcommittee was held at the ASHA National Office on October 16-17, 1981. The objectives of the meeting were to: (1) plan for collecting and analyzing data on existing competencies of speech-language pathologists and audiologists, (2) develop surveys to determine the competencies of speech-language pathologists and audiologists, and, (3) develop a time frame for data collection in Phase III.

The clinical service needs of the communicatively handicapped that were identified by the Regional Study Group participants and incorporated into the Master Report of Regional Meetings were used to develop competency statements to be incorporated into each of the surveys. The committee developed thirty-eight competencies that were identified as critical areas of need in each of the ten Regional Study Groups. The number was limited to thirty-eight to encourage maximum response rates.

The committee developed a different cover letter and respondent profile for each of the surveys. Committee members reviewed the drafts and made suggestions for the final surveys at the November 19, 1981 meeting held at the ASHA Convention.

The survey instruments were piloted with 30 practitioners, 15 supervisors of services and 15 directors of training programs in December, 1981. Followup postcards were sent to the pilot participants. The response rate was 65%. Although few errors were made by the respondents and comments indicated a favorable review, it was necessary to make some changes on the final surveys.

OBJECTIVE 2: Identify survey respondents.

The Competencies Subcommittee decided that the surveys would be sent to:

1. All directors of terminal baccalaureate programs, Education and Training Board (ETB) accredited programs, and non-ETB accredited programs in speech-language pathology and audiology;
2. All supervisors of speech-language pathology and audiology services, including supervisors in local education agencies;
3. All college/university supervisors of speech-language pathology and audiology programs; and
4. A random sample of speech-language pathologists and audiologists who provide services to the communicatively handicapped, including those who hold a baccalaureate degree.

The survey instruments for each of the above populations were unique; however, each allowed for a variety of comparisons to be made between groups, as well as within groups.

Although the competency statements were the same for each of the three populations, the letter, background information and format were different for each survey.

OBJECTIVE 3: Collect data

In February, 1982, the competency surveys were sent to 4,145 respondents including: (a) 324 directors of speech-language pathology and audiology programs; (b) 2,544 providers of services to the communicatively handicapped; (c) 677 supervisors of clinical programs in speech-language pathology and audiology and (d) 600 college and university supervisors in speech-language pathology and audiology programs.

Care was taken to assure that baccalaureate level service providers, both speech-language pathologists and audiologists, and those holding/not holding the American Speech-Language-Hearing Association's Certificate of Clinical Competence were included in the sample. The final surveys were not sent to those persons who were included in the pretest.

OBJECTIVE 4: Conduct follow-up to improve response rate from respondents.

Postcards were sent to all 4,145 respondents one week after the first mailing to remind them to complete and return the questionnaire. In March, a second survey form was sent to all persons not responding. In order to accomplish this objective, each survey was coded and the code number was recorded on a master list.

Return postage was supplied for all bachelor level service providers and all training program directors as an attempt to increase the rate of response. The population size for these two groups was small and it was imperative that their opinions were represented for the purposes of the study. Letters to both these populations were also personalized.

OBJECTIVE 5: Analyze data from a variety of perspectives.

In Phase III survey data were collected from practitioners, educational program directors, supervisors of clinical services, and college/university practicum supervisors in respect to competencies currently held by speech-language pathologists and audiologists. Practitioners were asked to rate themselves. Educational program directors and college/university supervisors were asked to rate their graduates. Clinical supervisors were asked to rate their staff.

Practitioner Survey

In analyzing the data, the following questions were asked:

> How do the data vary by certificate of clinical competence (CCC) holders versus bachelor level practitioners?
>
> How do the data vary by major employment setting?
>
> How do the data vary by the number of years employed?
>
> How frequently do practitioners use the various skills?
>
> What is the relationship between the frequency with which practitioners use skills and their ratings of their own competence to use these skills?
>
> What is the source of training for each skill?

Educational Program Directors, College/University Supervisors, and Clinical Supervisors Survey

In analyzing the data, the following questions were asked:

Educational Program Directors:

How do the data vary by type of degree?

How do the data vary by type of graduate program?

College/University Supervisors:

How do the data vary by type of degree?

How do the data vary by type of graduate program?

Clinical Supervisors

How do the data vary by setting?

How do the data vary by type of staff?

OBJECTIVE 6: Define the needs of communicatively handicapped individuals that are not being addressed, or addressed adequately, by the profession.

The major findings from the practitioners' surveys are as follows:[1]

Certification

In 29 of 38 skills, bachelor level practitioners rate themselves significantly lower than certified speech-language pathologists (CCC-SP).

Few certified and uncertified practitioners feel highly competent in using contemporary technology, managing finances, and working with the bilingual/bicultural population.

Bachelor level practitioners in large proportion serve children 6-11 and rarely over 21 in contrast to CCC-SP's who provide 80 percent of their services to persons 0-21 years of age.

Certified audiologists (CCC-A) serve 50 percent children and 50 percent adults.

Employment Setting

Regardless of work setting, CCC-SP's rate themselves as having high competence in establishing individual treatment plans, selecting individuals for inclusion into a caseload, and evaluating and treating persons with articulation disorders. CCC-SP's in the schools rate high competence in treating children with language disorders. CCC-SP's in private practice rate high competence in working in private practice settings.

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[1] Detailed findings are omitted here for the purpose of brevity. Detailed findings are described in the Competency Survey Report to which the raw data are appended in the form of tables (see Appendix A).

The self-ratings of competence for CCC-SP's employed in university and non-university clinic/hospital settings and private practice are significantly higher for more skills than those employed in the schools.

Regardless of work setting, CCC-A's rate themselves as having high competence in communicating diagnostic findings to other professionals, collaborating with other professionals, providing amplification services to the hearing-impaired and working with client's families. Those employed in the schools perceive themselves to have high competence in working with adolescents. CCC-A's in private practice rate themselves as having high competence in working in private practice settings.

The self-ratings for CCC-A's employed in university and non-university clinic/hospital settings and private practice are similar. Their ratings are significantly higher than CCC-A's employed in the schools in providing amplification services to the hearing-impaired and assessing auditory function to determine the site of lesion.

Number of Years Employed

On 12 of 38 skills, CCC-SP's show regular progression toward higher self-perceived competence with increased years of experience. With fewer years of experience, CCC-SP's show higher self-perceived competence in treating persons who are nonspeaking.

On 17 of 38 skills, CCC-A's show regular progression toward higher self-perceived competence with increased years of experience. With fewer years of experience, CCC-A's show higher self-perceived competence in delivering services in rural settings.

Frequency

Bachelor level practitioners report that they frequently or very frequently perform 15 of 38 skills, the most frequent being to evaluate and formulate treatment plans and to treat children with articulation and language disorders.

CCC-SP's report that they frequently or very frequently perform 16 skills, the most frequent being to establish individual treatment plans based on assessment data and to treat clients with articulation disorders.

CCC-A's report that they frequently or very frequently perform 12 skills, the most frequent being to communicate diagnostic findings to other professionals.

Bachelor level practitioners, CCC-SP's and CCC-A's, in large number, do not frequently use contemporary technology, work in rural and private practice settings, nor manage the finances of professional practice.

Frequency and Competency

Both bachelor level practitioners and CCC-SP's who frequently evaluate and treat persons with articulation disorders, work with preschool children and the aged feel competent in these skills. However, bachelor level practitioners do not rate themselves higher than CCC-SP's on any skill.

Both certified speech-language pathologists and audiologists who frequently identify high risk persons, communicate and collaborate with other professionals, deliver services in rural or private practice settings, and work with clients' families, preschool children, and the aged report high self-perceived competence in these skills.

Source of Training

CCC-SP's rate job experience as the first source of training for 19 of 38 skills, academic or practicum as the first source of training for 12 skills, continuing education first for none of the skills, other learning first for one of the skills, and not much training first for seven skills.

In 20 of 38 skills, CCC-A's rate job experience as the first source of training. They rate academic training as the first source of training in 8 of 38 skills.

Bachelor level practitioners, CCC-SP's and CCC-A's indicate that they have not received much training in using contemporary technology and managing the finances of professional practice.

The major findings from the educational program directors, college/university supervisors and clinical supervisors are as follows:

Educational Program Directors

Educational program directors do not rate graduates with the bachelor's degree as having high competence with any skill.

Educational program directors rate both speech-language pathology (SLP) and audiology graduates of graduate programs as having high competence in identifying persons at high risk and communicating diagnostic findings to other professionals.

Educational training program directors rate SLP graduates as having high competence in most general skills, evaluating and treating persons with articulation and language disorders, evaluating persons with articulation and language disorders, evaluating persons with fluency and phonation/ resonation disorders, and working with preschool children and children with severe language disorders.

Audiology graduates are rated as having high competence in providing amplification services, assessing auditory function, treating persons with communication problems related to hearing impairment, and working with clients' families.

The ratings of graduates' competence in both accredited and nonaccredited ETB programs are in agreement for most skills for graduates in speech-language pathology.

More skills were assigned high competence in non-ETB programs than ETB programs for graduates in audiology.

College/University Supervisors

College/university supervisors do not rate graduates with the bachelor's degree as having high competence with any skills.

The ratings of graduates' competence in SLP in both accredited and non-accredited programs are in agreement for most skills.

Clinical Supervisors of Professional Staff

Clinical supervisors rate CCC-SP's employed in university settings as having the highest competencies compared to those in the schools, private practice, or non-university settings.

Clinical supervisors rate CCC-SP's employed in the schools as having lower competencies than those in university, private practice, and non-university settings.

Clinical supervisors in all work settings rate CCC-SP's as having high competence in evaluating and treating articulation disorders.

Clinical supervisors in all work settings rate CCC-A's as having high competence in communicating diagnostic findings to other professionals.

Clinical supervisors rate CCC-A's employed in the schools as having lower competencies than those in other settings.

Clinical supervisors rate competencies of CCC-A's and CCC-SP's about equally for general skills and skills working with special populations. Major discrepancies between CCC-SP's and CCC-A's, as expected, are believed to be in skills working with various disorders.

Discrepancies between practitioner competencies and service needs

Two major areas of discrepancy from the practitioner discrepancy analysis emerged. One was the area of communication and collaboration by certified speech-language pathologists and audiologists (not bachelor level practitioners) with other professionals, clients, and families in all aspects of identification, intervention, prognosis, and other forms of service delivery and patient care. Certified practitioners rated themselves to be competent in these skills with frequent use of the skills, while the Regional Study Groups expressed a great need for practitioners to improve.

Another discrepancy area was in rural delivery of services. The practitioners rated themselves as having average competence but infrequent use; the Regional Study Group members indicated a need for practitioners to improve in this area.

Practitioners' self-perceptions as indicated in the competency survey results were frequently discrepant with the clinical service needs identified by the Regional Study Group participants. Practitioners rated themselves as having average to high skill in several skills in which the Regional Study Group participants indicated a need for improvement as related to ummet clinical service needs.

Practitioners rated themselves as having low competence in the use of contemporary technology, but also indicated that they infrequently used contemporary technology.

OBJECTIVE 7: Complete a report relative to Phase III.

The major results of the professional competency and research surveys and the discrepancies between the survey results and the clinical service needs, research needs, and training needs are described in the Master Report of Surveys and Discrepancies (see Appendix B).

In Phase III survey data were collected from practitioners, educational program directors, supervisors of clinical services, and college/university practicum supervisors in respect to competencies currently held by speech-language pathologists and audiologists. Competency survey instruments were constructed from clinical service needs identified in Phase II of the project. In this way, the unmet clinical service needs previously identified could be compared to the competency survey data. The aim of the participants in Phase III was to apply a discrepancy model to the study of currently existing competencies in the context of perceived unmet clinical service needs.

Also during Phase III, a research survey was conducted as a means of assessing opinions about what educational and/or training experiences should be included in the preparation of (1) professionals planning careers which require that they be knowledgeable users of research, and (2) professionals planning for careers in which they would be contributors to research.

Although the research survey was not designed to be correlated with the outcomes of the regional meetings, there were a number of instances where the items on the questionnaire appeared to be particularly relevant to issues discussed at the regional meetings.

OBJECTIVE 8: Select and invite experts to attend the National Conference (Phase IV).

The Professional Self-Study Project Advisory Committee Conference Subcommittee met in Chicago, Illinois on July 16-17, 1982 to develop procedures for selecting conference participants. The Conference Subcommittee identified conference participants from a pool of nominations submitted in order to achieve broad representation of the profession. The three means to nominate participants were:

1. An open invitation in the September and October, 1982 Asha (see Appendix C).
2. Letters to state association presidents to nominate up to five participants each.
3. Letters to related professional organizations (RPO's) to alert them that an open invitation existed.

The deadline for nominations was November 15, 1982. The total number of persons nominated was 242. The Conference Subcommittee met in January, 1983 to make the selections. The criteria for selection included:

- potential contribution to the issues
- area of specialization
- employment activity and setting
- geographical distribution
- minority representation

Advisory Committee members were participants, serving as facilitators and recorders. Members of the Executive Board, as well as representatives of ASHA standards groups, were invited. Three members of the National Office participated. The total number of participants was 121. (The list of participants is included in Appendix D).

OBJECTIVE 9: Evaluate Phase III.

A Phase III evaluation form was distributed to all members of the Advisory Committee at the end of Phase III. The Advisory Committee evaluated whether the objectives of Phase III were met effectively and efficiently and whether the objectives of Phase III were appropriate. Most of the objectives were rated as very satisfactory or moderately satisfactory. The Phase III evaluation is included in Appendix E.

YEAR THREE OBJECTIVES

July 1, 1982 - June 30, 1982

YEAR THREE

1982 - 1983

OBJECTIVES

PHASE IV: DISCREPANCY REDUCTION (MONTHS 25-36)

1. Distribute report from Phase III to National Conference attendees.
2. Plan National Conference.
3. Conduct National Conference so that educational strategies for providing the profession with the competencies necessary to meet the needs of communicatively handicapped individuals are defined.
4. Evaluate the National Conference.
5. Prepare a summary report of professional competencies and educational recommendations.
6. Distribute report in 5 above.
7. Complete a final report of the project, incuding a compilation of the results of all four phases.
8. Evaluate Phase IV.

OBJECTIVE 1: Distribute report from Phase III to National Conference attendees.

In order to familiarize themselves with the Professional Self-Study Project objectives and products, the following articles and reports developed during the first two years of the project were distributed to the National Conference participants:

1. Self-Study of Profession's Service and Training Needs, November, 1980.
2. Report of Advisory Committee for the Self-Study Project, November, 1981.
3. Professional Self-Study Project Master Report of Regional Meetings, July, 1981.

4. A summary of the Ten Regional Study Groups' Recommendations Relative to Training, July, 1981.

5. Research Needs Identified by the ten Regional Study Groups, July, 1981.

6. Phase III: Master [illegible]t of Surveys and Discrepancies, October, 1982.

In addition, a list [illegible]ferences for each of the ten issues to be discussed at the Conference was distributed. This partial list included articles in Asha, ASHA publications, ASHA position papers, and ASHA meeting reports. An article by Dr. Fred Minifie, ASHA President, the Single Profession Report, and the ten discussion papers (described below) were also sent.

OBJECTIVE 2: Plan National Conference

The Conference Subcommittee

The Conference Subcommittee of the Professional Self-Study Advisory Committee planned and conducted the 1983 National Conference, developed sessions for the 1982 ASHA Convention, and evaluated and disseminated the conference report. The Conference Subcommittee met in July, 1982 to:

(1) develop the content and procedures for the conference, based on the issues determined by the Analysis and Synthesis Subcommittee,

(2) select a location for the conference,

(3) determine the procedures for selecting the conference participants, and

(4) prepare for the procedures to commission Discussion Papers.

The subcommittee made final plans for the conduct of the Conference in January, 1983. The subsequent subcommittee meetings to execute the writing of the Conference proceedings were conducted by means of conference calls.

Conference Issues

The Analysis and Synthesis Subcommittee selected ten issues to be discussed at the National Conference. These issues were based on the clinical service needs identified in Phase II. These included:

1. What should be the content and objectives of undergraduate education in communication disorders?

2. What should be the content and objectives of graduate education in communication disorders?

3. What is the need for a professional doctorate in communication disorders?

4. How should undergraduate and graduate education in speech-language pathology and audiology interface with other areas of university training?

5. How may we better prepare clinicians for the realities of providing services to the communicatively disordered in a variety of settings?

   a. How can we prepare clinicians to interact effectively with members of related disciplines, clients and families, including skills at oral and written reporting and cooperative planning?

   b. Should professional training teach administrative, management and marketing skills?

   c. Should professional training aim to prepare clinicians who are familiar with the requirements of specific settings: schools, hospitals, university teaching, private practice?

6. How may we prepare speech-language pathologists and audiologists for a changing society?

   a. How can we produce clinicians who are able to:

      (1) self-evaluate clinical competencies in the light of unmet service needs?

      (2) evaluate service outcomes?

      (3) be flexible, adaptive, and resourceful problem-solvers?

   b. How can we identify the kinds of populations who need services and how can we develop mechanisms for meeting their needs?

   c. How can we encourage the academic enterprise to be the leader in identifying and implementing needed educational changes in place of retaining outworn but traditional curricula?

7. What should be the role of specialty training in relation to minimum standards for professional preparation in speech-language pathology and audiology?

    a. When should specialization begin?

    b. Do we need both generalists and specialists?

    c. What is the common core of knowledge and skill on which specialization may be based?

8. What should be the role of continuing professional education in meeting the full range of needs of faculty, clinical service providers, administrators, and scientists in human communication and its disorders?

    a. How should continuing professional education relate to programs of graduate education?

    b. What kinds of information and skills are better suited to continuing education programs than to graduate professional preparation?

9. How can we improve the role of research and educate speech-language pathologists and audiologists to be competent users of research?

    a. How can we produce clinicians who view the integration of current research into clinical practice as a major responsibility?

    b. What is the appropriate distinction between what is needed to prepare a generator vs. a user of research at different degree levels and areas of professional specializations?

    c. How should we go about identifying the clinical research needs?

10. What steps should be taken to insure that graduates are able to use and understand advancing technology for clinical service and research?

Select Writers and Presenters of Discussion Papers

The Conference Subcommittee selected potential writers and presenters of discussion papers from names submitted by the Advisory Committee. Consideration was given to women, minorities and nonuniversity persons. A presenter was selected for each of the ten issues:

Issue	Presenter
I	Robert Erickson, Western Michigan University, Kalamazoo, Michigan
II	Kenneth Moll, University of Iowa, Iowa City, Iowa
III	Roy Koenigsknecht, Northwestern University, Evanston, Illinois
IV	Joel Stark, City University of New York, New York
V	Angela Loavenbruck, Audiology Associates, Rockland, New York
VI	Sandra Holley, Southern Connecticut State College, New Haven, Conn.
VII	Robert Douglass, California State University, Los Angeles, Calif.
VIII	John Bess, V.A. Medical Center, Atlanta, Georgia
IX	Ray Kent, University of Wisconsin, Madison, Wisconsin
X	Harry Levitt, City University of New York, New York

The papers were used to provide focus to the discussion groups as they developed resolutions at the National Conference on Undergraduate, Graduate and Continuing Education. The papers are included in Appendix F.

The following Professional Self-Study products were sent to the presenters: Training Needs Report, Research Needs Report, Master Report of Regional Meetings, The Research Survey Report, and the Master Report of Competency Surveys and Discrepancies. Other reports relative to each issue were sent to the presenters.

Determine Conference Theme

The Conference Subcommittee decided that the theme of the National Conference would be "Knowledge and Service: Products of Education in Human Communication and its Disorders."

Determine Conference Dates and Criteria for Selecting Conference Site

The subcommittee decided that the conference site be accessible to participants, reasonably priced, and located in an ERA state. Trudy Snope, in conjunction with the National Office convention and meetings staff, selected a final site—the Radisson Plaza Hotel in St. Paul, Minnesota, in accordance with the above criteria. The dates for the conference were April 7-10, 1983.

Conference Organization and Procedures

The Conference was designed to provide time for small work group sessions, as well as open discussion among all of the Conference attendees. All educational strategies developed at the Conference were subject to group review, discussion, revision and ultimately, ratification. The Conference program is included in Appendix G.

During Plenary Session I on Thursday afternoon, a welcome address and keynote address were given. The keynote address was presented by Richard M. Flower, a participant in the 1963 National Conference on Graduate Education. Each of the invited authors of discussion papers presented a 15-minute paper on one of the ten issues.

Each of the five succeeding two and one-half hour sessions were devoted to small group discussions on five issue areas, with all participants divided into discussion groups engaging in separate discussions of the five issues. The presenter of the discussion paper rotated from group to group serving as a resource. Facilitators and recorders were selected from the Advisory Committee. Each group rotated its membership.

The ten issues for the conference were clustered into five areas to accommodate the format of the five discussion groups.

A second plenary session was held on Saturday morning after all groups discussed each issue. During this session, the results of the five discussion groups were reviewed.

Single issue groups met on Saturday afternoon. The groups were preformed by the Conference Committee based on information from each profile (on the nomination form) and the issues in which the participant indicated interest. The presenter of the discussion paper remained with the issue group during the entire three-hour session. The outcomes of each group were written statements summarizing the group's recommendations and the drafting of resolutions.

After the single issue groups met, a committee wrote resolutions. All participants met in the third plenary session on Sunday to vote on the resolutions.

The outcomes of the conference were resolutions, including action statements, to be referred to the ASHA Executive Board and appropriate ASHA committees.

OBJECTIVE 3: Conduct National Conference so that educational strategies for providing the profession with the competencies necessary to meet the needs of communicatively handicapped children are defined.

One hundred twenty-one invited participants from 39 states, the District of Columbia, and Canada, recently attended the 1983 National Conference on Undergraduate, Graduate, and Continuing Education in St. Paul, Minnesota from April 7-10, 1983. The conferees, both speech-language pathologists and audiologists, represented university educational programs, public school programs, hospital and clinic settings, private practice and research agencies.

The theme of the conference was "Knowledge and Service: Products of Education in Human Communication and its Disorders."

The first half day of the Conference, the afternoon of April 7, was devoted to a welcome by Executive Director Frederick T. Spahr, a presidential address by ASHA President Fred D. Minifie, and a history and charge by Robert L. Ringel, Steering Committee member of the Ad Hoc Committee on Undergraduate, Graduate and Continuing Education. The keynote address, "Looking Backward and Looking Forward: Some Views from a Four Decade Window," was presented by Richard M. Flower. These addresses will be published in the conference proceedings as ASHA Report Number 13.

Trudy Snope, Director of the Professional Self-Study Project, explained the organization of the conference. Noel D. Matkin, Steering Committee member of the Ad Hoc Committee on Undergraduate,Graduate and Continuing Education, introduced the presenters of the issue papers. Norma S. Rees, Chair, coordinated the Plenary Session. Ten persons presented a paper on each of the ten Conference issues.

After Plenary I on Thursday afternoon, each participant, during Thursday afternoon and Friday, engaged in small group discussions in each of five concurrent issue clusters, including combinations of the ten basic conference issues. Participants rotated so that all participants addressed each other.

On Saturday morning, all participants met during the second Plenary session, during which each of the cluster facilitators reviewed the results of the sessions.

On Saturday evening, the facilitators and recorders met to finalize the resolutions and, on Sunday morning, each participant voted on the resolutions during Plenary III, chaired by Norma S. Rees.

The conference participants reaffirmed the master's level as the entry level into the profession. They recommended that undergraduate education emphasize the liberal arts and sciences, with only introductory study in the disorders and limited involvement in practicum. They felt that graduate education should emphasize the preparation of generalists rather than specialists and that the Ph.D. is the designated and most appropriate doctoral degree.

The conferees recommended that ASHA adopt the definitions and terminology proposed by the Ad Hoc Committee on the Single Profession and its Credentialing.

There was an emphasis on addressing the needs of the underserved populations, minorities, the profoundly hearing impaired, and the elderly. Further, there was an emphasis on voluntary continuing education throughout one's career using innovative methods and current technology. The participants identified a commitment to incorporate an attitude of critical thinking and a research philosophy into all phases of the educational process.

Steps to insure that graduates are able to understand advancing technology were proposed. The resolutions and balloting on the resolutions are included in Appendix H.

OBJECTIVE 4: Evaluate the National Conference

The participants at the National Conference evaluated the conference in terms of the organization, presentations and small group discussions. Most participants agreed, or strongly agreed, that the conference was well organized, that the Conference presentations were applicable and effective, and that the small group discussions were effective. They indicated that the cluster discussions were very beneficial to exchange ideas with a variety of professionals. Some participants felt that the conference should have been longer and that some of the facilitators were not as strong as others. The conference evaluation is included in Appendix I.

OBJECTIVE 5: Prepare a summary report of professional competencies and educational recommendations.

The report of the 1983 National Conference on Undergraduate, Graduate and Continuing Education will include the ten discussion papers, the Master Report of Surveys and Discrepancies, conference background and procedures, the resolutions and the implication of the National Conference outcomes on the education of speech-language pathologists and audiologists who serve the communicatively handicapped.

OBJECTIVE 6: Distribute report in 5 above

The report will be distributed widely in an effort to facilitate the implementation of the proposed strategies as soon as possible so that the needs of all communicatively handicpped children can be appropriately addressed by the profession.

The Advisory Committee will submit the Conference Proceedings with the recommendations to the ASHA Executive Board. The report will also be disseminated to National Conference participants and ASHA boards and committees, such as the Continuing Education Board (CEB), Clinical Certification Board (CCB), Council on Professional Standards in Speech-Language Pathology and Audiology (COPS), Education and Training Board (ETB) and the Professional Services Board (PSB). This report represents a compilation of the results of all four phases.

OBJECTIVE 7: Complete a final report of the project, including a compilation of the results of all four phases.

This final report represents a compilation of all four phases.

OBJECTIVE 8: Evaluate Phase IV

The evaluation of the National Conference represents an evaluation of Phase IV (See Objective 4 for details).

THE FUTURE OF THE SELF-STUDY

THE FUTURE OF THE SELF-STUDY

The resolutions developed by and voted on by the National Conference participants will be submitted to the ASHA Executive Board for action at the next Board meeting in August, 1983. Some resolutions will be referred to ASHA's committees and boards and others to the ASHA Legislative Council in November, 1983.

The major outcomes of the resolutions to be presented to the Executive Board are as follows:

Issue I. Undergraduate Education

1. An emphasis was placed on the necessity of providing an arts and sciences background for our undergraduate students, particularly a "beefing up" of the biological, physical and linguistic sciences background. Some tagged this a "return to basics." The undergraduate curriculum should stress the development of basic knowledge and critical thinking, rather than the acquisition of technical skills.
2. Identification of a common core of undergraduate subject matter is urged.
3. Universities should emphasize human communication sciences and disorders as a discipline at the undergraduate level. The time has come for students to major in the discipline, without necessarily having intentions to pursue professional education.
4. It was reaffirmed that the undergraduate degree should not be an entry level degree.

Issue II. Graduate Education

1. It was reaffirmed that the master's degree should prepare "general practitioners" rather than specialists.
2. The differentation between education and training was stressed. The hope was expressed that master's degree programs would stress logical thinking, problem solving, and application of the scientific method throughout the curriculum, as well as the development of clinical skills.
3. Alternative models of clinical practicum and the Clinical Fellowship Year (CFY) should be investigated.

Issue III. Professional Doctorate

1. The majority of participants felt that the existing Ph.D., Ed.D. or Sc.D. were robust enough to include doctoral programs that emphasized preparation for a clinical career. The need does not exist for a separately tagged doctoral degree.
2. It was stressed that scholarly, scientific, and creative components are essential elements in any doctoral program of study in human communication sciences and disorders.

Issue IV. Interface of students with those in other disciplines

1. Concern was expressed for the generally inadequate skills reflected in students in terms of their ability to interact in interdisciplinary and trandisciplinary situations. Efforts to ameliorate this situation were called for.

2. The participants recommended that ASHA adopt the proposals by the Committee on a Single Profession.

Issue V. Preparation of students to serve in a variety of settings

1. Concern was expressed regarding weaknesses in student preparation in terms of oral and written expression, counseling skills, and ability to perform in various employment settings.

2. The majority felt that the obtaining of knowledge and skills related to administration, management, and marketing should be left up to individual students rather than to department requirements. Such knowledge and skills are available from a variety of sources (e.g., other academic departments, continuing education).

Issue VI. Preparation of speech-language pathologists and audiologists for a changing society

1. Educational programs are encouraged to increase student exposure to and sensitivity towards cultural variations in our society.

2. Educational programs are encouraged to promote competent services to the profoundly hearing impaired population.

3. There is a need to further study the use of supportive personnel and technicians in service delivery.

4. There is a need for greater flexibility in professional preparation designed to meet existing professional standards.

Issue VII. Speciality Certification

1. There was general support for recognition of specialization that would come after obtaining clinical certification (generalist preparation).

Issue VIII. Continuing Education

1. The group emphasized continuing education throughout one's career.

2. Continuing education programs should reflect creativity, flexibility, and strategies in the use of current technology.

3. The group was opposed to implementing mandatory programs for maintaining certification and membership.

4. ASHA should reaffirm its position on voluntary continuing education.

Issue IX. Research

1. There was a very strong support for increased emphasis on research at all levels of our educational programs.

2. The need exists to develop new programs to encourage research in public school settings.

3. The need exists to foster better communication between researchers and practitioners.

4. Concern was expressed about the relatively small research base of the field.

5. Efforts should be made to encourage researchers, both those noncertified and those in related disciplines, to identify with our discipline and profession.

Issue X. Advanced Technology

1. Overwhelming sentiment towards and recognition of the need for students and faculty to gain the necessary background to make use of the state-of-the-art technology, especially computers.

A report, including the resolutions, the outcome of the voting and the general implications for the Association will be published in the September *Asha*.

The Conference proceedings will be published as ASHA Report Number 13 in the fall, 1983. This report will include the Conference presentations, the ten issue papers, implications for the Association and the voting on the resolutions.

Just as the recommendations that issued from the Highland Park Conference on Graduate Education in 1963 greatly affected the development of the profession, the 1983 Conference recommendations should have a significant impact on the profession and the population we serve.

APPENDIX A

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PROFESSIONAL SELF-STUDY PROJECT
PROFESSIONAL COMPETENCIES SURVEY REPORT

September 1982

The clinical service needs of the communicatively handicapped that were identified by the Regional Study Group participants from January to May 1981 and incorporated into the Master Report of Regional Meetings were used to develop 38 competency statements to be incorporated into each of four surveys addressed to four target groups:

1. Practitioners: a random sample of speech-language pathologists and audiologists who provide services to the communicatively handicapped, including those who hold a baccalaureate degree (N=2554). Practitioners were asked to rate themselves.

2. Educational program directors: directors of terminal baccalaureate programs, Education and Training Board (ETB) accredited programs, and non-ETB accredited programs in speech-language pathology and audiology (N=296). Directors were asked to rate their graduates.

3) Clinical supervisors: supervisors of speech-language pathology and audiology services, including supervisors in local education agencies (N=677). Supervisors were asked to rate their staff.

4) College/university supervisors: college/university supervisors of speech-language pathology and audiology programs (N=596). Supervisors were asked to rate their graduates.

These groups, a total of 4,223 persons, were sent surveys in February 1982. Follow-up postcards were sent to all persons. A second survey was sent to all those who had not responded to the first mailing and postcard. The response rate was 73.8 percent with 2,914 surveys returned.

PRACTITIONER SURVEY RESULTS

For each topic addressed in the practitioners' survey data, the analysis of bachelor level practitioner data precedes that of certified speech-language pathologists and certified audiologists. A summary of the major findings is outlined, after which detailed findings for each topic are discussed. The raw data are appended in the form of tables.

In analyzing the data, the following questions were asked:

> How do the data vary by certificate of clinical competence (CCC) holders versus bachelor level practitioners?
>
> How do the data vary by major employment setting?
>
> How do the data vary by the number of years employed?
>
> How frequently do practitioners use the various skills?
>
> What is the relationship between the frequency with which practitioners use skills and their ratings of their own competence to use these skills?
>
> What is the source of training for each skill?

The major findings from the practitioners' surveys are as follows:

Certification

In 29 of 38 skills, bachelor practitioners rate themselves significantly lower than certified speech-language pathologists (CCC-SP).

Few certified and uncertified practitioners feel highly competent in using contemporary technology, managing finances, and working with the bilingual/bicultural population.

Bachelor level practitioners in large proportion serve children aged 6-11 and rarely over 21 in contrast to CCC-SP's who provide 80 percent of their services to persons 0-21 years of age.

Certified audiologists (CCC-A) serve 50 percent children and 50 percent adults.

Employment Setting

Regardless of work setting, CCC-SP's rate themselves as having high competence in establishing individual treatment plans, selecting individuals for inclusion into a caseload, and evaluating and treating persons with articulation disorders. CCC-SP's in the schools rate high competence in treating children with language disorders. CCC-SP's in private practice rate high competence in working in private practice settings.

The self-ratings of competence for CCC-SP's employed in university and non-university clinic/hospital settings and private practice are significantly higher for more skills than those employed in the schools.

Regardless of work setting, CCC-A's rate themselves as having high competence in communicating diagnostic findings to other professionals, collaborating with other professionals, providing amplification services to the hearing-impaired and working with clients' families. Those employed in the schools perceive themselves as having high competence in working with adolescents. CCC-A's in private practice rate high competence in working in private practice settings.

The self-ratings for CCC-A's employed in university and non-university clinic/hospital settings and private practice are similar. Their ratings are significantly higher than CCC-A's employed in the schools in providing amplification services to the hearing-impaired and assessing auditory function to determine site of lesion.

Number of Years Employed

On 12 skills, CCC-SP's show absolute progression toward self-perceived competence with increased years of experience. With fewer years of experience, CCC-SP's show higher self-perceived competence in treating persons who are nonspeaking.

On 17 skills, CCC-A's show absolute progression toward self-perceived competence with increased years of experience. With fewer years of experience, CCC-A's show show higher self-perceived competence in delivering services in rural settings.

Frequency

Bachelor level practitioners report that they frequently or very frequently perform 15 of 38 skills, the most frequent being to evaluate and formulate treatment plans and to treat children with articulation and language disorders.

CCC-SP's report that they frequently or very frequently perform 16 skills, the most frequent being to establish individual treatment plans based on assessment data and to treat clients with articulation disorders.

CCC-A's report that they frequently or very frequently perform 12 skills, the most requent being to communicate diagnostic findings to other professionals.

Bachelor level practitioners, CCC-SP's and CCC-A's, in large number, do not frequently use contemporary technology, work in rural and private practice settings, nor manage the finances of professional practice.

Frequency and Competency

Both bachelor level practitioners and CCC-SP's who frequently evaluate and treat persons with articulation disorders, work with preschool children and the aged feel competent in these skills. However bachelor level practitioners do not rate themselves higher than CCC-SP's on any skill.

Both certified speech-language pathologists and audiologists who frequently identify persons who are high risk, communicate and collaborate with other professionals, deliver services in rural or private practice settings, and work with clients' families, preschool children and the aged feel high competence in these skills.

Source of Training

CCC-SP's rate job experience as the first source of training for 19 skills, academic or practicum as the first source of training for 12 skills, continuing education first for no skills, other learning first for no skills, and not much training first for seven skills.

In 20 of 38 skills, CCC-A's rate job experience as the first source of training. They rate academic training as the first source of training in 8 of 38 skills.

Bachelor level practitioners, CCC-SP's and CCC-A's indicate that they have not received much training in using contemporary technology and managing the finances of professional practice.

HOW DO THE DATA VARY BY CERTIFICATE OF CLINICAL COMPETENCE (CCC) HOLDERS VERSUS BACHELOR LEVEL PRACTITIONERS?

Since only 2.9 percent of the respondent practitioners hold the doctorate, no analysis was conducted on doctoral level practitioners' self-ratings of their competence to use skills. Seventy-six percent of the respondents hold the master's degree and 20.3 percent hold the baccalaureate degree as their highest earned degree.

Cross tabulations for bachelor level practitioners, CCC-SP's and CCC-A's, and nonparametric tests were conducted. The percentage of practitioners with high competence - an assigned score of eight or higher on the one to 10 self-rated scale - is reported on Table 1.

Bachelor Level Practitioners

Over 80 percent of the bachelor level practitioners rate themselves as having high competence on three skills (including selecting individuals for a caseload, and evaluating and treating persons with articulation disorders). Less than 30 percent rate themselves as having high competence in evaluating and treating most other disorders and special populations.

On 34 of 38 skills, bachelor level practitioners rate themselves lower than CCC-SP's. Of these 34 items, 29 items are significant at the .01 level. Bachelor level practitioners rate themselves significantly higher than CCC-SP's in delivering sources in rural settings. They rate themselves significantly higher than CCC-A's on 17 skills, most of which are skills in working with speech and language disorders.

In these data bachelor level practitioners seem to be primarily performing as speech-language pathologists in the schools.

Certified Speech-Language Pathologists

Over 80 percent of the CCC-SP's rate themselves as having high competence on eight skills including general skills, evaluating and treating language disorders, and working with clients' families. Less than 30 percent rate themselves as having high competence in using contemporary technology, managing finances, and working with bilingual/bicultural populations.

They rate themselves higher than bachelor level practitioners on 34 items, of which 29 are significant, and higher than CCC-A's on 22 items, of which 19 are significant.

Certified Audiologists

Over 80 percent of the CCC-A's rate themselves as having high competence in working with clients' families and the aged in addition to skills working with the hearing-impaired. Less than 30 percent rate themselves as having high competence in skills working with speech and language disorders, using contemporary technology, interpreting laws, and managing finances.

Audiologists rate themselves higher than bachelor level practitioners on 21 skills and higher than CCC-SP's on 15 skills of which 10 are significant. These skills include working in private practice, managing finances, working with the aged, in addition to working with the hearing-impaired.

HOW DO THE DATA VARY BY MAJOR EMPLOYMENT SETTING?

Cross tabulations for certified speech-language pathologists and audiologists and nonparametric difference tests were conducted. The percentage of practitioners with high competence - an assigned score of eight or higher on the one to 10 self-rated competency scale - is reported on Tables 13A (speech-language pathologists) and 13B (audiologists).

Each item was reviewed and rated across four employment settings - school, including preschool, elementary and secondary schools; university hospital, clinic or rehabilitation centers; non-university hospital, clinic or rehabilitation centers; and private practice for certified speech-language pathologists (CCC-SP) and audiologists (CCC-A).

Certified Speech-Language Pathologists

Competence

Practitioners in the four settings rate themselves as having high competence in establishing individual treatment plans, selecting individuals for a caseload, evaluating and treating persons with articulation disorders, and working with clients' families (schools - 77 percent).

Of the practitioners in the four settings, only those in the schools perceive themselves as having high competence in treating children with language disorders. Predictably, those in private practice perceive themselves as having high competence in delivering services in private practice settings. Of the CCC-SP's in the four settings, less than 30 percent perceive themselves as having high competence in using contemporary technology, working with the bilingual/bicultural and the hearing-impaired populations. Less than 30 percent of those in the schools perceive themselves as having high competence working in private practice, treating phonation/resonation disorders, and working with the non-speaking.

Results of Significance Tests

The self-ratings for CCC-SP's employed in university, non-university and private practice settings are significantly higher for more skills than those employed in the schools including evaluating and treating persons with motor speech disorders, treating persons with phonation/resonation disorders, and working with the aged. The self-ratings for university, non-university, and private practice settings are similar. The only skill for CCC-SP's employed in the schools that is significantly higher than practitioners in all other work settings is working with the bilingual/bicultural populations, a skill in which the median competence is 5.5. Predictably, the one skill that is significantly higher for those in private practice settings is delivering service in private practice settings.

Although over 80 percent of the CCC-SP's in school settings rate themselves as having high competence in evaluating and treating articulation and language disorders, the differences are not significant except for treating children with language disorders.

Certified Audiologists

Competence

Of the CCC-A's in all settings, only those in the schools perceive themselves as having high competence in working with adolescents. Predictably, those in private practice perceive themselves as having high competence in delivering services in private practice settings. Audiologists in all settings rate themselves as having high competence in communicating diagnostic findings to other professionals, collaborating with other professionals, providing amplification services and working with clients'families.

Less than 30 percent of the CCC-A's in all settings perceive themselves as having high competence in evaluating and treating speech and language disorders, and using contemporary technology. Only in private practice do more than 30 percent of the CCC-A's perceive themselves as having high competence in managing finances.

Results of Significance Tests

The ratings for CCC-A's employed in the university, non-university and private practice settings are similar. The self-ratings for those employed in schools are significantly higher for skills in working with speech and language disorders; however, the median ratings in these skills are less than three in most skills. CCC-A's in schools rate themselves significantly higher than those in university and non-university settings in selecting a caseload, interpreting laws, and working in rural settings. The self-ratings for those employed in university, non-university and private practice are significantly higher than those employed in the schools in providing amplification services, assessing auditory function to determine site of lesion, and working with the aged. Those in private practice are significantly higher working in a private practice and managing finances.

Special consideration should be given to the following item: "Manage the finances of professional practice." Private practitioners were predictably higher on this item than others. However, only 48.1 percent of CCC-SP's and 59.8 percent of the CCC-A's in private practice rated themselves as having high competence in this skill. This rating is in contrast to Item 12, "Deliver services in private practice settings in which private practitioners were predictably higher (92.3 percent of CCC-SP's and 98.3 percent of CCC-A's rate themselves to have high competence). Therefore Item 14 represents an issue for further consideration.

HOW DO THE DATA VARY BY THE NUMBER OF YEARS EMPLOYED?

Correlations between years of experience and competence of skill were conducted for both certified speech-language pathologists and audiologists (see Tables 14A and 14B).

Certified Speech-Language Pathologists

The pattern is higher self-ratings of competence with more years of experience. Their self-ratings of competence are significantly higher on 12 skills. With fewer years of experience, CCC-SP's self-ratings of competence are significantly higher in treating persons who are nonspeaking than those with more years of experience; however, only 46.1 percent of CCC-SP's with less than three years experience feel they have high competence in this skill.

Certified Audiologists

As for CCC-SP's, the pattern is higher self-ratings of competence with more years of experience. Their self-ratings of competence are significantly higher on 17 skills.

With fewer years of experience, CCC-A's self-ratings of competence are significantly higher for delivering services in rural settings; however, only 43.6 percent of CCC-A's with less than three years experience feel they have competence in this skill.

HOW FREQUENTLY DO PRACTITIONERS USE THE VARIOUS SKILLS?

For each of the skills, practitioners were asked to indicate whether on the average over the past year they used that skill very frequently (at least weekly), frequently (at least monthly but less than weekly), occasionally (less than monthly), or not at all (see Table 6).

The two categories - very frequently and frequently (that is, monthly or more frequent) were summed to identify the skills for which the total was 50 percent or greater. This was done by three categories: BA, CCC-SP, and CCC-A. The skills so identified were then rank ordered. The skills in which 50 percent or more practitioners indicated they had not used the skills were also identified.

Bachelor Level Practitioners

Bachelor level practitioners report that they frequently or very frequently perform 15 of 38 skills, the most frequent being to establish treatment plans and to treat children with articulation disorders and language disorders.

Over 50 percent do not use contemporary technology, work in rural and private practice settings, and manage finances.

Bachelor level practitioners use nine skills significantly more frequently than CCC-SP's (including working in rural settings, interpreting laws, treating articulation, language and fluency disorders, and working with adolescents).

Certified Speech-Language Pathologists

CCC-SP's report that they frequently or very frequently perform 16 skills, the most frequent being to establish individual treatment plans based on assessment data, to evaluate and treat clients with articulation disorders, and to communicate diagnostic findings to other professionals.

Of the 38 skills, CCC-SP's use 17 skills significantly more frequently than bachelor level practitioners. These skills include most general skills, evaluating and treating phonation/resonation and motor speech disorders, and working with preschool children and clients' families.

They use 18 skills significantly more frequently than CCC-A's, mostly in working with speech and language disorders and special populations.

Over 50 percent do not use the same skills bachelor level practitioners do not use - use contemporary technology, work in rural and private practice settings, and manage finances.

Certified Audiologists

CCC-A's report that they frequently or very frequently perform 12 skills, the most frequent being to communicate diagnostic findings to other professionals, providing amplification services to hearing-impaired persons, and collaborating with other professionals.

CCC-A's use 17 skills significantly more frequently than bachelor level practitioners. In addition to skills in working with the hearing-impaired, they more frequently communicate and collaborate with other professionals, work in private practice, manage finances, and work with the preschool and aged.

They use 15 skills significantly more frequently than CCC-SP's. They include identifying high-risk, communicating and collaborating with other professionals, working in private practice, managing finances, and working with preschool children, adolescents, and the aged.

Over 50 percent do not use 14 skills, most of which are working with speech and language disorders, using contemporary technology, working in rural and private practice settings, and managing the finances.

WHAT IS THE RELATIONSHIP BETWEEN THE FREQUENCY PRACTITIONERS PERFORM SKILLS AND THEIR RATINGS OF COMPETENCE TO USE THESE SKILLS?

Cross tabulations and nonparametric difference tests for bachelor, CCC-SP's and CCC-A's were conducted.

The sample for each skill in Table 1A was restricted to respondents claiming use of skill on at least a monthly basis on the average in the year preceding the survey. "High Competence" is defined as a score of eight or higher on the one to ten self-rated competency scale.

Bachelor Level Practitioners

Over 80 percent of bachelor level practitioners rate themselves as having high competence in six skills they frequently use including evaluating and treating persons with articulation disorders, working with preschool children and the aged, selecting individuals for a caseload, and working in a rural setting. Less than 30 percent have high competence in treating persons with phonation/resonation disorders. In comparing the bachelor level practitioners and the CCC-SP's who frequently use certain skills, the bachelor level practitioners do not rate themselves significantly higher on any skill. In comparing the bachelor level practitioners and the CCC-A's who frequently use certain skills, the bachelor level practitioners predictably rate themselves significantly higher on seven items, most of which are skills in working with various speech and language disorders.

Certified Speech-Language Pathologists

Over 80 percent of CCC-SP's rate themselves as having competence in 17 skills they frequently use including evaluating and treating persons with articulation and language disorders, working with preschool, adolescent and the aged, and communicating and collaborating with other professionals. Less than 30 percent have high competence in no skills they frequently use.

The CCC-SP's rate themselves significantly higher than bachelor level practitioners on 25 skills.

In comparing the CCC-SP's and the CCC-A's who frequently use certain skills, the CCC-SP's rate their competence significantly higher on 12 skills, most of which are skills in working with various speech and language disorders, except for establishing individual treatment plans, selecting a caseload and collaborating with other professionals.

Certified Audiologists

Over 80 percent of the CCC-A's rate themselves as having competence in 12 skills they frequently use, including identifying persons who are high risk, communicating and collaborating with other professionals, delivering services in rural or private practice settings, working with clients' families, preschool children, adolescents and the aged in addition to skills in working with the hearing-impaired. Less than 30 percent have high competence in no skills they frequently use.

The CCC-A's rate themselves significantly higher than bachelor level practitioners on 17 skills, and CCC-SP's on 8 skills, most of which are skills in working with the hearing-impaired, except for communicating diagnostic findings to other professionals, working with adolescents and the aged.

WHAT IS THE SOURCE OF TRAINING FOR EACH SKILL?

Practitioners were asked whether they acquired each skill through academic or practicum training, on the job experience, continuing education, other learning (e.g., workshops, reading on their own time) or not much training. Respondents could check more than one source.

The proportion of bachelor level, CCC-SP, CCC-A practitioners' perceptions of training in acquiring each skill was analyzed (see Tables 7, 9, 10).

Each of the five settings was rank ordered within items based on the frequency of responses for general skills, working with various disorders and special populations. However, trends were extrapolated based on the general pattern of ordering primary source of training and instances of not much training.

Bachelor Level Practitioners

In 19 of 38 skills, on the job experience is the first source of training for bachelor level practitioners. In 9 out of 38 skills, the bachelor level practitioners report academic training as the primary source of training.

Academic or practicum training is rated as the primary source of training for several skills in working with various disorders. The second source of training is on the job experience. While evaluating and treating children with language disorders are commonly used skills, they are acquired (first ranking) on the job and then by academic training.

Bachelor level practitioners report that they did not receive much training in 10 skills including skills in working with the hearing-impaired, using contemporary technology, delivering services in private practice, managing finances, and working with the aged, nonspeaking and bilingual/bicultural.

Certified Speech-Language Pathologists

CCC-SP's rate job experience as the first source of training for 19 skills, academic or practicum as the first source of training for 12 skills, continuing education first for no skills, other learning first for no skills, and not much training was rated first for seven skills.

For general skills and working with special populations, the primary source of training is on the job experience; however, the pattern for source of training in working with various disorders is academic or practicum training, job experience, continuing education, other learning, not much learning.

In 17 of 38 skills, continuing education ranks as the third source of training for CCC-SP's. It ranks higher only for:

- Interpret laws affecting the communicatively handicapped.

- Evaluate the quality of screening tools.

Little training was indicated in 7 of 38 skills including using contemporary technology, delivery services in rural and private practice settings, managing finances, and skills in working with hearing-impaired.

Certified Audiologists

In 20 of 38 skills, on the job experience is reported as the first source of training.

In eight of 38 skills, academic training is reported as the primary source of training.

For general skills and working with special populations, the primary source of training is on the job experience; however, the primary source of working with various disorders is academic or practicum training.

Little training was indicated in 11 skills including using contemporary technology, delivering service in rural setting, managing finances of professional practice, and skills related to speech and language disorders.

EDUCATIONAL PROGRAM DIRECTORS, COLLEGE/UNIVERSITY SUPERVISORS, AND CLINICAL SUPERVISORS SURVEY RESULTS

Separate surveys were sent to training program directors, college/university supervisors and clinical supervisors.

As in the practitioners competencies survey results section, a summary of the major findings is outlined, after which detailed findings for each topic are addressed. The raw data are appended in the form of tables.

In analyzing the data, the following questions were asked:

Educational Program Directors:

How do the data vary by type of degree?

How do the data vary by type of graduate program?

College/University Supervisors:

How do the data vary by type of degree?

How do the data vary by type of graduate program?

Clinical Supervisors:

How do the data vary by setting?

How do the data vary by type of staff?

Educational Program Directors

Educational program directors do not rate graduates with the undergraduate degree as having high competence with any skill.

Educational program directors rate both speech-language pathology (SLP) and audiology graduates of graduate programs as having high competence in identifying persons at high risk and communicating diagnostic findings to other professionals.

Educational program directors rate SLP graduates as having high competence in most general skills, evaluating and treating persons with articulation and language disorders, evaluating persons with fluency and phonation/resonation disorders, and working with preschool children and children with severe language disorders.

Audiology graduates are rated as having high competence in providing amplification services, assessing auditory function, treating persons with communication problems related to hearing impairment, and working with clients' families.

The ratings of graduates' competence in both accredited and nonaccredited ETB programs are in agreement for most skills for graduates in speech-language pathology.

More skills were assigned high competence in non-ETB programs than ETB programs for graduates in audiology.

College/University Supervisors

College/university supervisors do not rate graduates with the undergraduate degree as having high competence with any skills.

The ratings of graduates' competence in SLP in both accredited and nonaccredited programs are in agreement for most skills.

Graduates in audiology in non-ETB programs are rated higher than in ETB programs in six skills.

Clinical Supervisors of Professional Staff

Clinical supervisors rate CCC-SP's employed in university settings as having the highest competencies compared to those in the schools, private practice or non-university settings.

Clinical supervisors rate CCC-SP's employed in the schools as having lower competencies than those in university, private practice, and non-university settings.

Clinical supervisors in all work settings rate CCC-SP's as having high competence in evaluating and treating articulation disorders.

Clinical supervisors in all work settings rate CCC-A's as having high competence in communicating diagnostic findings to other professionals.

Clinical supervisors rate CCC-A's employed in the schools as having lower competencies than those in other settings.

Clinical supervisors rate competencies of CCC-A's and CCC-SP's about equally for general skills and skills working with special populations. Major discrepancies, as expected, are in skills working with various disorders.

EDUCATIONAL PROGRAM DIRECTORS: HOW DO THE DATA VARY BY TYPE OF DEGREE?

The percentage of training program directors assigning high competence - higher on the one to ten competency scale - to "average" students upon graduation is reported on Table 15.

Undergraduates

Eighty percent or more of training program directors do not assign high competence for any skill to undergraduates upon graduation. In fact, for only two skills (evaluate and treat persons with articulation disorders) do more than 40 percent of the training program directors assign high competence to undergraduates upon graduation. Less than 30 percent of the undergraduates are rated to have high competence in 30 skills.

Speech-Language Pathology Graduates

Over 80 percent of training program directors assign high competence to SLP graduates in 15 skills - most general skills, evaluating and treating persons with articulation and language disorders, evaluating persons with fluency and phonation/resonation disorders, and working with preschool children and children with severe language disorders.

Less than 30 percent of the SLP graduates are rated to have high competence in five skills - using contemporary technology, managing finances, and skills in working with the hearing impaired.

Audiology Graduates

Over 80 percent of training program directors assign high competence to audiology graduates in seven skills - providing amplification services, assessing auditory function, treating persons with communication problems related to hearing impairment, working with clients' families, identifying persons at high risk for communication disorders, and communicating diagnostic findings to other professionals.

Less than 30 percent assign high competence in using 15 skills, using contemporary technology, managing finances, and skills in working with speech and language disorders.

EDUCATIONAL PROGRAM DIRECTORS: HOW DO THE DATA VARY BY TYPE OF GRADUATE PROGRAM?

The percentage of training program directors' assigning high competence - a score of 8 or higher on the one to 10 competency scale - to their "average" students upon graduation in both Education and Training Board (ETB) and non-ETB programs is reported on Table 16. Nonparametric tests were conducted for both SLPs and audiologists in ETB and non-ETB programs.

Speech-Language Pathology Graduates

Competence

High competence is rated similarly for both SLP graduates from ETB and non-ETB accredited SLP programs. Over 80 percent of training program directors in ETB programs assign high competence to SLP graduate level graduates in 15 skills compared to 14 skills in non-ETB programs. The only skills in which 30 percent or less are rated to have low competence were using contemporary technology, managing finances and skills in working with the hearing-impaired.

Results of Significance Tests

The ratings of graduates' competence made by directors of accredited and non-accredited programs in SLP are in agreement except for delivering services in rural settings and private practice settings (non-ETB higher) and treating persons with fluency disorders (ETB accredited higher).

Audiology Graduates

Competence

More skills are assigned high competence to audiology graduates in non-ETB accredited programs than in ETB programs (13 versus 6). Only six skills are assigned high competence in ETB accredited programs, whereas 13 skills are assigned high competence in non-ETB accredited programs. Both are rated high competence in identifying persons for high risk, communicating diagnostic findings, providing amplification services, assessing auditory function, working with clients' families and the aged. Less than 30 percent are assigned high competence in skills using contemporary technology (ETB only), managing finances, and working with speech and language disorders.

Results of Significance Tests

The ratings of graduates' competence made by directors of accredited and non-accredited programs in audiology are in agreement except for evaluating the quality of screening tools and developing prognostic statements (non-ETB higher).

COLLEGE/UNIVERSITY SUPERVISORS: HOW DO THE DATA VARY BY TYPE OF DEGREE?

The percentage of college/university supervisors assigning high competence - a score of eight or higher on the one to ten competency scale - to graduates of undergraduate programs, audiology graduates, and speech-language pathology graduates is reported on Table 20.

Undergraduate

None of the skills is assigned high competence by more than 80 percent of the supervisors for graduates of undergraduate programs. Less than 30 percent of supervisors rate high competence to undergraduates in 35 of 38 skills. Only evaluating and treating articulation disorders, and working with preschool children are rated as high competence by more than 30 percent of supervisors.

Speech-Language Pathology Graduates

SLP graduates are rated high by more than 80 percent of the supervisors for seven skills - identifying high risk, establishing treatment plans, evaluating and treating persons with articulation and language disorders, and working with preschool children. The skills in which they are rated by less than 30 percent of the supervisors to have high competence are using contemporary technology, managing finances, and skills in working with the hearing-impaired.

Audiology Graduates

No skill for audiology graduates is assigned high competence by more than 80 percent of the supervisors. The only skills for which they are rated by less than 30 percent of supervisors to have high competence are skills in working with speech and language problems, managing the finances of a professional practice, and using contemporary technology.

COLLEGE/UNIVERSITY SUPERVISORS: HOW DO THE DATA VARY BY TYPE OF GRADUATE PROGRAM?

The percentage of college/university supervisors assigning high competence - an assigned score of eight or higher on the one to ten competency scale - to speech-language pathology and audiology graduates in both ETB and non-ETB programs is reported on Table 21.

Speech-Language Pathology Graduates

Competence

Both ETB and non-ETB programs in SLP are assigned high competence in establishing individual treatment plans, evaluating and treating language disorders, evaluating articulation disorders, and working with preschool children. Over 80 percent of the college/university supervisors assign high competence to SLP graduates of ETB programs for seven skills and graduates of non-ETB programs for five skills. Less than 30 percent assign high competence to both SLP graduates in ETB and non-ETB programs in using contemporary technology, managing finances, and skills in working with the hearing-impaired.

Results of Significance Tests

The ratings of graduates' competence made by supervisors in accredited and non-accredited programs in SLP are in agreement except for treating fluency and phonation/resonation disorders (ETB significantly higher), and evaluating phonation/resonation disorders (non-ETB significantly higher).

Audiology Graduates

Competence

Over 80 percent of the supervisors assign seven high competence skills to audiology graduates in non-ETB accredited programs. Only one skill is assigned high competence in ETB accredited programs. Both ETB and non-ETB programs in audiology are assigned high competence in providing amplification services. Less than 30 percent assign high competence to audiology graduates, both ETB and non-ETB programs in using contemporary technology (ETB only), managing finances, and skills in working with speech and language disorders.

Results of Significance Tests

The ratings in audiology are in agreement, except for six skills in which non-ETB programs are significantly higher.

CLINICAL SUPERVISORS: HOW DO THE DATA VARY BY SETTING?

Nonparametric difference tests were conducted to determine the significance of difference in clinical supervisors' ratings of practitioners' competence to use certain skills by employing setting. The percentage of clinical supervisors assigning high competence - an assigned score of eight or higher on the one to ten competency scale - to speech-language pathologists and audiologists and the median competence is reported on Tables 17 and 18.

Each item was reviewed and rated across four employment settings - school, including preschool, elementary and secondary schools; university hospital, clinic or rehabilitation center; non-university hospital, clinic or rehabilitation center; and private practice for certified speech-language pathologists (CCC-SP) and audiologists (CCC-A).

Speech-Language Pathologists

Competence

Over 80 percent of the clinical supervisors in all work settings rate CCC-SP's as having high competence in evaluating and treating persons with articulation disorders (17, 24). Identifying persons at high risk and selecting individuals for inclusion in a caseload are rated high for three of four settings.

Supervisors rate CCC-SP's employed in university settings as having the highest competencies compared to those in the schools, private practice or non-university settings. The only exceptions are delivering service in private practice settings and managing finances in professional practice.

Supervisors rate CCC-SP's employed in the schools as having lower competencies than those in university, non-university and private practice settings. The only exceptions are delivering services in rural settings and interpreting laws affecting the communicatively handicapped (lower in non-university settings). Less than 30 percent rate SLP's in the schools to have high competence for 16 skills; in university settings - four skills; in non-university settings - five skills; and in private practice - two skills.

Results of Significance Tests

Significant differences in competencies of CCC-SP's in various settings by clinical supervisors are as follows:

- Those in schools are rated significantly lower than those in university and non-university settings for working with the aged, evaluating non-speaking persons and persons with multiple handicaps.
- Those in private practice are rated significantly higher than those in all other work settings for delivering services in a private practice setting and managing finances of a professional practice.
- Those in schools are rated significantly lower than those in all other settings in eleven skills.

Audiologists

Competence

Over 80 percent of the clinical supervisors in school settings assign high competence to audiologists in the schools for one skill; in university clinic/hospital programs for nine skills; in non-university clinic/hospital programs for six skills; in private practice for 14 skills. Clinical supervisors do not rate CCC-A's employed in university settings as having the highest competence in any one skill across all other work settings.

Over 80 percent of the clinical supervisors in all work settings rate CCC-A's as having high competence in communicating diagnostic findings to other professionals. Identifying persons at high risk, providing amplification services, assessing auditory function to determine site of lesion, working with clients' families, and working with the aged are rated as high skills in three of four work settings (not schools).

Clinical supervisors rate CCC-A's employed in the schools as having lower competencies than those in other settings. Less than 30 percent of the supervisors rate CCC-A's as having high competence in managing finances (except for private practice) working with various speech and language disorders (except for private practice), and working with bilingual/bicultural populations (except for university and private practice).

Results of Significance Tests

Significant differences in competencies of CCC-A's in various settings as rated by clinical supervisors are as follows:

- Deliver service in private practice settings (higher in private practice, lower in schools).
- Manage finances (higher in private practice, lower in schools).
- Evaluate auditory function for lesion site (higher in university, lower in schools).
- Work with aged (higher in private practice, lower in schools).
- The ratings for school audiologists are not significantly higher than audiologists in other settings for any skill.

CLINICAL SUPERVISORS: HOW DO THE DATA VARY BY TYPE OF STAFF?

The percentage of clinical supervisors assigning high competence to their staff is reported on Table 19.

Speech-Language Pathologists

Over 80 percent of clinical supervisors assign high competence to SLP staff on five skills - identify high risk, establish individual treatment plans, select individuals for caseload, evaluate and treat articulation disorders. Less than 30 percent assign high competence on skills in using contemporary technology, managing finances, working with bilingual/bicultural populations, and skills working with the hearing-impaired.

Audiology Staff

Over 80 percent of clinical supervisors assign high competence to audiology staff on three skills in communicating findings to other professionals, providing amplification services, and working with the aged. Less than 30 percent assign high competence to 12 skills in managing finances, working with bilingual/bicultural population, and working with speech and language disorders.

APPENDIX

GENERAL SKILLS

1. Identify persons at high risk for communication disorders.

2. Evaluate the quality of screening tools for identification.

3. Evaluate the quality of assessment tools.

4. Communicate diagnostic findings to other professionals (e.g. psychologists, physicians).

5. Establish individual treatment plans based on assessment data.

6. Select individuals with communication disorders for inclusion in a caseload.

7. Collaborate with other professionals (e.g. psychologists, physicians) in remediating communication disorders.

8. Use contemporary technology for remediation (e.g. computer-assisted instruction, telecommunications, and prosthetic devices other than hearing aids).

9. Develop prognostic statements based on assessment data.

10. Use ongoing assessment data in making the decision to terminate remediation services.

11. Deliver services in rural settings.

12. Deliver services in private practice settings.

13. Interpret laws affecting the communicatively handicapped (e.g. due process, individualized education programs, confidentiality).

14. Manage the finances of professional practice (e.g. cost accounting, third-party payments, budget management).

APPENDIX (continued)

SKILLS IN WORKING WITH VARIOUS DISORDERS

15. Provide amplification services to hearing-impaired persons.
16. Evaluate children with language disorders.
17. Evaluate persons with articulation disorders.
18. Assess auditory function to determine site of lesion.
19. Evaluate persons with fluency disorders.
20. Evaluate persons with phonation/resonation disorders.
21. Evaluate persons with motor speech (neurological) disorders.
22. Treat persons with communication problems related to hearing impairment.
23. Treat children with language disorders.
24. Treat persons with articulation disorders.
25. Work with hearing-impaired infants.
26. Treat persons with fluency disorders.
27. Treat persons with phonation/resonation disorders.
28. Treat persons with motor speech (neurological) disorders.

SKILLS IN WORKING WITH SPECIAL POPULATIONS

29. Work with clients' families.
30. Work with preschool children.
31. Work with adolescents.
32. Work with the aged.
33. Evaluate persons who are nonspeaking.
34. Evaluate persons with multiple handicaps.
35. Work with children with severe language impairments.
36. Work with the bilingual/bicultural population.
37. Trat persons who are nonspeaking.
38. Treat persons with multiple handicaps.

ABLE 15. PERCENTAGE OF TRAINING PROGRAM DIRECTORS ASSIGNING HIGH COMPETENCE TO GRADUATES AND MEDIAN ASSIGNED COMPETENCE BY TYPE OF DEGREE AND SKILL[1]

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	213	182	185
GENERAL SKILLS			
1. IDENTIFY HIGH RISK			
% assigning high competence	36.9%	81.8%	81.4%
(Median assigned competence)	6.7	8.7	8.8
2. EVALUATE SCREENING TOOLS			
% assigning high competence	28.6%	82.3%	78.8%
(Median assigned competence)	6.1	8.4	8.6
3. EVALUATE ASSESSMENT TOOLS			
% assigning high competence	22.8%	81.8%	77.9%
(Median assigned competence)	5.6	8.3	8.3
4. COMMUNICATE FINDINGS TO PROFESSIONALS			
% assigning high competence	17.0%	80.7%	86.7%
(Median assigned competence)	5.3	8.3	8.7
5. ESTABLISH IND. TREATMENT PLANS			
% assigning high competence	33.0%	92.3%	72.3%
(Median assigned competence)	6.7	9.0	8.4
6. SELECT INDS. FOR CASELOAD			
% assigning high competence	35.0%	91.2%	74.8%
(Median assigned competence)	6.7	9.1	8.6
7. COLLABORATE OTHER PROFESSIONALS			
% assigning high competence	15.0%	74.6%	77.0%
(Median assigned competence)	5.1	8.1	8.4
8. USE CONTEMPORARY TECHNOLOGY			
% assigning high competence	1.94%	17.6%	24.8%
(Median assigned competence)	2.5	5.6	5.5
9. DEVELOP PROGNOSTIC STATEMENTS			
% assigning high competence	17.5%	72.4%	71.4%
(Median assigned competence)	5.0	8.2	8.2

TABLE 15 (Continued)

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	213	182	185
10. USE ONGOING ASSESSMENT DATA			
% assigning high competence	26.2%	82.9%	70.3%
(Median assigned competence)	5.9	8.6	8.3
11. DELIVER SERVICES RURAL SETTINGS			
% assigning high competence	26.6%	71.8%	61.8%
(Median assigned competence)	5.4	8.6	8.2
12. DELIVER SERVICES PRIVATE PRACTICE			
% assigning high competence	5.5%	47.5%	57.9%
(Median assigned competence)	2.4	7.3	7.9
13. INTERPRET LAWS			
% assigning high competence	27.2%	62.4%	43.8%
(Median assigned competence)	5.4	8.0	7.3
14. MANAGE FINANCES			
% assigning high competence	1.5%	12.3%	18.6%
(Median assigned competence)	1.5	5.1	5.4
SKILLS IN WORKING WITH VARIOUS DISORDERS			
15. PROVIDE AMPLIFICATION SERVICES			
% assigning high competence	5.5%	19.0%	93.0%
(Median assigned competence)	2.7	5.2	9.2
16. EVALUATE CHILDREN LANGUAGE DIS.			
% assigning high competence	27.5%	93.4%	24.1%
(Median assigned competence)	6.1	9.1	5.6
17. EVALUATE PERSONS ARTIC. DIS.			
% assigning high competence	43.6%	96.7%	23.8%
(Median assigned competence)	7.1	9.3	5.3
18. EVALUATE AUD. FUNCTION DET. SITE LESION			
% assigning high competence	5.0%	13.7%	93.0%
(Median assigned competence)	2.0	4.1	4.1
19. EVALUATE PERSONS FLUENCY DIS.			
% assigning high competence	15.7%	81.3%	4.7%
(Median assigned competence)	4.8	8.8	3.2

TABLE 15 (Continued)

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	213	182	135
20. EVALUATE PERSONS PHONATION/RESON. DIS.			
% assigning high competence	31.2%	85.2%	4.7%
(Median assigned competence)	4.7	8.7	3.4
21. EVALUATE PERSONS MOTOR SPEECH DIS.			
% assigning high competence	7.9%	73.1%	6.6%
(Median assigned competence)	3.5	8.2	3.1
22. TREAT COMM. PROBLEMS RELATED TO HEARING			
% assigning high competence	13.7%	48.9%	80.0%
(Median assigned competence)	4.9	7.5	8.6
23. TREAT CHILDREN LANGUAGE DIS.			
% assigning high competence	34.8%	95.6%	9.4%
(Median assigned competence)	6.5	9.1	5.0
24. TREAT PERSONS ARTIC DIS.			
% assigning high competence	43.6%	96.2%	7.6%
(Median assigned competence)	7.1	9.3	4.8
25. WORK WITH HEARING-IMPAIRED INFANTS			
% assigning high competence	5.5%	22.9%	60.5%
(Median assigned competence)	2.2	5.7	7.9
26. TREAT PERSONS FLUENCY DISORDERS			
% assigning high competence	8.8%	77.9%	2.0%
(Median assigned competence)	4.6	8.5	2.8
27. TREAT PERSONS PHONATION/RES. DIS.			
% assigning high competence	8.8%	76.9%	3.9%
(Median assigned competence)	4.3	8.4	3.0
28. TREAT PERSONS MOTOR SPEECH DIS.			
% assigning high competence	5.9%	68.0%	4.81%
(Median assigned competence)	3.5	8.1	2.9
SKILLS IN WORKING WITH SPECIAL POP.			
29. WORK WITH CLIENTS' FAMILIES.			
% assigning high competence	12.7%	75.7%	83.3%
(Median assigned competence)	4.9	8.3	8.5

TABLE 15 (Continued)

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	213	182	135
30. WORK WITH PRESCHOOL CHILDREN			
% assigning high competence	34.8%	88.5%	76.3%
(Median assigned competence)	6.4	9.0	8.7
31. WORK WITH ADOLESCENTS			
% assigning high competence	19.6%	70.9%	79.8%
(Median assigned competence)	5.4	8.3	8.6
32. WORK WITH AGED			
% assigning high competence	8.9%	70.3%	93.0%
(Median assigned competence)	4.3	8.1	8.9
33. EVALUATE NONSPEAKING			
% assigning high competence	2.5%	42.3%	40.5%
(Median assigned competence)	3.0	7.2	7.0
34. EVALUATE PERSONS MULTIPLE HANDICAPS			
% assigning high competence	3.5%	45.1%	44.2%
(Median assigned competence)	3.3	7.3	7.2
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.			
% assigning high competence	21.6%	86.3%	29.9%
(Median assigned competence)	5.0	8.6	5.4
36. WORK WITH BILINGUAL/BICULTURAL			
% assigning high competence	9.9%	34.8%	21.3%
(Median assigned competence)	3.3	6.2	5.0
37. TREAT NONSPEAKING PERSONS			
% assigning high competence	6.0%	41.3%	20.2%
(Median assigned competence)	3.2	7.1	5.7
38. TREAT MULTIPLE HANDICAPS			
% assigning high competence	6.4%	46.2%	34.2%
(Median assigned competence)	3.9	7.3	6.6

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[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by training program directors to rate their "average" students upon graduation.

TABLE 16 PERCENTAGE OF TRAINING PROGRAM DIRECTORS ASSIGNING HIGH COMPETENCE TO GRADUATE LEVEL GRADUATES AND MEDIAN ASSIGNED COMPETENCE, BY DIRECTOR'S TYPE OF GRADUATE PROGRAM AND BY SKILL[1]

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFFER. TEST[2]	ETB	NON-ETB	DIFFER. TEST[2]
NUMBER OF CASES	98	84	NA	67	55	NA
GENERAL SKILLS						
1. IDENTIFY HIGH RISK						
% assigning high competence	81.4%	82.1%	NS	80.3%	83.0%	NS
(Median assigned competence)	8.7	8.7		8.8	8.8	
2. EVALUATE SCREENING TOOLS						
% assigning high competence	80.4%	84.5%	NS	77.3%	80.9%	†
(Median assigned competence)	8.3	8.4		8.4	8.9	
3. EVALUATE ASSESSMENT TOOLS						
% assigning high competence	80.4%	83.3%	NS	75.8%	80.9%	NS
(Median assigned competence)	8.4	8.3		8.2	8.4	
4. COMMUNICATE FINDINGS TO PROFESSIONALS						
% assigning high competence	74.2%	88.1%	NS	86.4%	87.2%	NS
(Median assigned competence)	8.2	8.4		8.7	8.7	
5. ESTABLISH IND. TREATMENT PLANS						
% assigning high competence	92.8%	91.7%	NS	65.2%	82.6%	NS
(Median assigned competence)	9.1	8.9		8.1	8.7	
6. SELECT INDS. FOR CASELOAD						
% assigning high competence	87.6%	95.2%	NS	72.3%	78.3%	NS
(Median assigned competence)	9.1	9.1		8.4	8.8	
7. COLLABORATE OTHER PROFESSIONALS						
% assigning high competence	73.2%	76.2%	NS	75.8%	78.7%	NS
(Median assigned competence)	8.1	8.2		8.3	8.5	
8. USE CONTEMPORARY TECHNOLOGY						
% assigning high competence	24.1%	13.1%	NS	19.4%	32.6%	NS
(Median assigned competence)	5.7	5.5		5.4	5.7	
9. DEVELOP PROGNOSTIC STATEMENTS						
% assigning high competence	71.1%	73.8%	NS	62.1%	84.8%	†
(Median assigned competence)	8.2	8.1		7.9	8.6	

TABLE 16 (continued)

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFFER. TEST[2]	ETB	NON-ETB	DIFFER. TEST[2]
NUMBER OF CASES	98	84	NA	67	55	NA
10. USE ONGOING ASSESSMENT DATA						
% assigning high competence	80.4%	85.7%	NS	66.2%	76.1%	NS
(Median assigned competence)	8.7	8.5		8.1	8.5	
11. DELIVER SERVICES RURAL SETTINGS						
% assigning high competence	66.3%	78.0%	†	62.7%	60.5%	NS
(Median assigned competence)	8.5	8.8		8.2	8.3	
12. DELIVER SERVICES PRIVATE PRACTICE						
% assigning high competence	40.0%	56.0%	†	56.7%	59.6%	NS
(Median assigned competence)	6.8	7.8		7.8	8.0	
13. INTERPRET LAWS						
% assigning high competence	64.9%	59.5%	NS	43.9%	43.5%	NS
(Median assigned competence)	8.1	7.9		7.3	7.2	
14. MANAGE FINANCES						
% assigning high competence	8.3%	16.9%	NS	19.4%	17.4%	NS
(Median assigned competence)	4.9	5.3		5.4	5.4	
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. PROVIDE AMPLIFICATION SERVICES						
% assigning high competence	14.9%	23.8%	NS	94.0%	91.7%	NS
(Median assigned competence)	5.1	5.4		9.2	9.1	
16. EVALUATE CHILDREN LANGUAGE DIS.						
% assigning high competence	94.9%	91.7%	NS	22.7%	26.2%	NS
(Median assigned competence)	9.2	9.0		5.9	5.3	
17. EVALUATE PERSONS ARTIC. DIS.						
% assigning high competence	95.9%	97.6%	NS	20.6%	28.6%	NS
(Median assigned competence)	9.3	9.4		5.3	5.4	
18. EVALUATE AUD. FUNCTION DET. SITE LESION						
% assigning high competence	11.1%	16.7%	NS	95.5%	89.6%	NS
(Median assigned competence)	3.5	4.5		9.2	8.9	
19. EVALUATE PERSONS FLUENCY DIS.						
% assigning high competence	82.7%	79.8%	NS	4.7%	4.8%	NS
(Median assigned competence)	8.9	8.6		3.1	3.4	

TABLE 16 (continued)

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFFER. TEST[2]	ETB	NON-ETB	DIFFER. TEST[2]
NUMBER OF CASES	98	84	NA	67	55	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.						
% assigning high competence	87.8%	82.1%	NS	3.1%	7.0%	NS
(Median assigned competence)	8.7	8.6		3.4	3.6	
21. EVALUATE PERSONS MOTOR SPEECH DIS.						
% assigning high competence	70.4%	76.2%	NS	4.7%	9.5%	NS
(Median assigned competence)	8.2	8.3		2.9	3.6	
22. TREAT COMM. PROBLEMS RELATED TO HEARING						
% assigning high competence	49.0%	48.8%	NS	76.1%	85.4%	NS
(Median assigned competence)	7.5	7.5		8.7	8.4	
23. TREAT CHILDREN LANGUAGE DIS.						
% assigning high competence	96.9%	94.0%	NS	9.5%	9.3%	NS
(Median assigned competence)	9.2	9.1		5.0	5.1	
24. TREAT PERSONS ARTIC DIS.						
% assigning high competence	95.9%	96.4%	NS	3.2%	14.0%	NS
(Median assigned competence)	9.3	9.4		4.7	4.8	
25. WORK WITH HEARING-IMPAIRED INFANTS						
% assigning high competence	19.1%	27.2%	NS	53.7%	70.2%	NS
(Median assigned competence)	5.5	5.9		7.7	8.1	
26. TREAT PERSONS FLUENCY DISORDERS						
% assigning high competence	81.6%	73.5%	†	1.6%	2.5%	NS
(Median assigned competence)	8.7	8.3		2.5	3.4	
27. TREAT PERSONS PHONATION/RES. DIS.						
% assigning high competence	77.6%	76.2%	NS	3.2%	4.8%	NS
(Median assigned competence)	8.4	8.3		2.7	3.5	
28. TREAT PERSONS MOTOR SPEECH DIS.						
% assigning high competence	67.3%	68.7%	NS	3.2%	7.1%	NS
(Median assigned competence)	8.1	8.2		2.7	3.3	
SKILLS IN WORKING WITH SPECIAL POP.						
29. WORK WITH CLIENTS' FAMILIES.						
% assigning high competence	76.5%	74.7%	NS	80.6%	87.2%	NS
(Median assigned competence)	8.2	8.4		8.3	8.7	

TABLE 16 (continued)

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFFER. TEST[2]	ETB	NON-ETB	DIFFER. TEST[2]
NUMBER OF CASES	98	84	NA	67	55	NA
30. WORK WITH PRESCHOOL CHILDREN						
% assigning high competence	86.7%	90.5%	NS	71.6%	83.0%	NS
(Median assigned competence)	9.0	9.0		8.8	8.6	
31. WORK WITH ADOLESCENTS						
% assigning high competence	70.4%	71.4%	NS	74.6%	87.2%	NS
(Median assigned competence)	8.3	8.3		8.6	8.5	
32. WORK WITH AGED						
% assigning high competence	67.3%	73.8%	NS	89.6%	97.9%	NS
(Median assigned competence)	8.1	8.1		8.9	8.9	
33. EVALUATE NONSPEAKING						
% assigning high competence	43.9%	40.5%	NS	39.4%	42.2%	NS
(Median assigned competence)	7.3	7.1		7.0	7.1	
34. EVALUATE PERSONS MULTIPLE HANDICAPS						
% assigning high competence	45.9%	44.0%	NS	39.4%	51.1%	NS
(Median assigned competence)	7.4	7.2		7.1	7.5	
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.						
% assigning high competence	86.7%	85.7%	NS	28.1%	32.6%	NS
(Median assigned competence)	8.6	8.6		5.4	5.4	
36. WORK WITH BILINGUAL/BICULTURAL						
% assigning high competence	28.9%	41.7%	NS	18.8%	25.0%	NS
(Median assigned competence)	5.9	6.8		4.9	5.5	
37. TREAT NONSPEAKING PERSONS						
% assigning high competence	40.8%	42.9%	NS	20.0%	20.5%	NS
(Median assigned competence)	7.2	7.1		5.7	5.8	
38. TREAT MULTIPLE HANDICAPS						
% assigning high competence	45.9%	46.4%	NS	32.3%	37.0%	NS
(Median assigned competence)	7.3	7.3		6.5	6.6	

[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by training program directors to rate their "average" students upon graduation.

[2] *: Significantly different pair at α= .01, with Mann-Whitney U Tests

†: Significantly different pair at α= .05, with Mann-Whitney U Tests

TABLE 17. PERCENTAGE OF CLINICAL SUPERVISORS ASSIGNING HIGH COMPETENCE TO SPEECH-LANGUAGE PATHOLOGY STAFF AND MEDIAN ASSIGNED COMPETENCE BY SETTING AND BY SKILL, AND RESULTS OF NONPARAMETRIC DIFFERENCE TESTS BY SKILL[1]

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	155	49	155	14	NA	NA	NA	NA	NA	NA
GENERAL SKILLS										
1. IDENTIFY HIGH RISK										
% assigning high competence	80.3%	93.3%	82.7%	76.9%	*	†		†		
(Median assigned competence)	8.4	9.5	8.9	8.8						
2. EVALUATE SCREENING TOOLS										
% assigning high competence	53.9%	82.6%	67.5%	61.5%	*	*		*		
(Median assigned competence)	7.6	9.0	8.0	8.3						
3. EVALUATE ASSESSMENT TOOLS										
% assigning high competence	51.6%	87.0%	68.9%	53.8%	*	*		†	†	
(Median assigned competence)	7.6	8.6	8.1	7.8						
4. COMMUNICATE FINDINGS TO PROFESSIONALS										
% assigning high competence	65.4%	95.7%	85.5%	76.9%	*	*			†	
(Median assigned competence)	8.0	9.1	8.8	8.3						
5. ESTABLISH IND. TREATMENT PLANS										
% assigning high competence	76.5%	95.7%	87.5%	84.6%	*	*				
(Median assigned competence)	8.3	9.0	9.0	8.9						
6. SELECT INDS. FOR CASELOAD										
% assigning high competence	80.1%	93.5%	88.8%	75.0%	*	*		†		
(Median assigned competence)	8.5	9.6	8.9	8.8						
7. COLLABORATE OTHER PROFESSIONALS										
% assigning high competence	58.8%	91.3%	82.2%	76.9%	*	*		†		
(Median assigned competence)	7.8	9.2	8.7	8.2						
8. USE CONTEMPORARY TECHNOLOGY										
% assigning high competence	9.46%	43.5%	34.4%	16.7%	*	*		†	†	
(Median assigned competence)	4.2	7.1	6.3	5.5						
9. DEVELOP PROGNOSTIC STATEMENTS	37.7%	78.3%	65.1%	69.2%	*	*				
% assigning high competence	6.7	8.3	8.0	7.9						
(Median assigned competence)										

TABLE 17 (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	155	49	155	14	NA	NA	NA	NA	NA	NA
10. USE ONGOING ASSESSMENT DATA										
% assigning high competence	56.2%	79.5%	75.0%	76.9%	*	*		†		
(Median assigned competence)	7.7	8.9	8.3	8.6						
11. DELIVER SERVICES RURAL SETTINGS										
% assigning high competence	61.4%	55.9%	36.1%	63.6%		*				
(Median assigned competence)	8.1	7.7	6.8	8.7						
12. DELIVER SERVICES PRIVATE PRACTICE										
% assigning high competence	27.7%	57.1%	37.0%	84.6%	†	†	*		†	*
(Median assigned competence)	5.8	8.1	6.7	9.6						
13. INTERPRET LAWS										
% assigning high competence	54.5%	54.5%	38.9%	66.7%		†				†
(Median assigned competence)	7.7	7.7	6.8	8.9						
14. MANAGE FINANCES										
% assigning high competence	6.0%	21.6%	9.6%	61.5%	*	*	*		†	*
(Median assigned competence)	2.9	4.8	4.6	8.3						
SKILLS IN WORKING WITH VARIOUS DISORDER										
15. PROVIDE AMPLIFICATION SERVICES										
% assigning high competence	16.3%	27.5%	24.5%	41.7%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	4.4	5.0	5.0	7.0						
16. EVALUATE CHILDREN LANGUAGE DIS.										
% assigning high competence	68.8%	87.0%	77.6%	84.6%	*	*		†		
(Median assigned competence)	8.1	9.6	8.7	8.9						
17. EVALUATE PERSONS ARTIC. DIS.										
% assigning high competence	95.5%	93.5%	90.1%	89.6%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	9.2	9.6	9.2	9.6						
18. EVALUATE AUD. FUNCTION DET. SITE LESION										
% assigning high competence	3.0%	27.5%	16.8%	33.3%	*	*				
(Median assigned competence)	1.9	3.3	2.8	1.5						
19. EVALUATE PERSONS FLUENCY DIS.										
% assigning high competence	38.2%	63.0%	60.3%	69.2%	†	*				
(Median assigned competence)	7.0	8.0	7.8	8.1						

TABLE 17 (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS^2					
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	155	49	155	14	NA	NA	NA	NA	NA	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.										
% assigning high competence	29.9%	63.0%	60.3%	69.2%	†	*				
(Median assigned competence)	7.0	8.0	7.8	8.1						
21. EVALUATE PERSONS MOTOR SPEECH DIS										
% assigning high competence	29.2%	78.3%	76.3%	75.0%	*	*	*			
(Median assigned competence)	6.2	8.6	8.5	8.5						
22. TREAT COMM. PROBLEMS RELATED TO HEARING										
% assigning high competence	34.4%	52.2%	44.7%	46.2%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	6.9	7.6	7.3	7.3						
23. TREAT CHILDREN LANGUAGE DIS.										
% assigning high competence	72.1%	78.3%	79.0%	91.7%		*				
(Median assigned competence)	8.2	9.2	8.9	9.0						
[illegible] TREAT PERSONS ARTIC DIS.										
% assigning high competence	93.5%	95.7%	88.7%	84.6%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	9.1	9.4	9.2	9.4						
25. WORK WITH HEARING-IMPAIRED INFANT										
% assigning high competence	8.2%	34.1%	22.1%	33.3%	*	*	*			
(Median assigned competence)	3.3	6.2	4.9	6.0						
26. TREAT PERSONS FLUENCY DISORDERS										
% assigning high competence	35.5%	63.0%	49.7%	58.3%	*	*				
(Median assigned competence)	6.5	7.8	7.5	7.8						
27. TREAT PERSONS PHONATION/RES. DIS.										
% assigning high competence	26.1%	69.6%	51.0%	58.3%	*	*	†			
(Median assigned competence)	6.2	8.1	7.5	8.0						
28. TREAT PERSONS MOTOR SPEECH DIS.										
% assigning high competence	25.5%	69.6%	72.4%	66.7%	*	*	*			
(Median assigned competence)	6.0	8.6	8.6	8.5						
SKILLS IN WORKING WITH SPECIAL POP.										
29. WORK WITH CLIENTS' FAMILIES.										
% assigning high competence	55.6%	84.8%	73.5%	76.9%	*	*	†			
(Median assigned competence)	7.7	8.9	8.5	8.4						

TABLE 17 (Continued)

SKILL	SETTING				RESULTS OF DIFFEREN[illegible] TESTS[2]					
	SCHOOLS (1)	UNIVER-SITY (2)	NON-UNI-VERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	155	49	155	14	NA	NA	NA	NA	NA	NA
30. WORK WITH PRESCHOOL CHILDREN										
% assigning high competence	53.7%	79.5%	64.0%	76.9%	*	†		†		
(Median assigned competence)	7.7	9.2	8.3	8.9						
31. WORK WITH ADOLESCENTS										
% assigning high competence	41.7%	68.9%	62.6%	69.2%	*	*				
(Median assigned competence)	7.1	8.2	7.9	8.0						
32. WORK WITH AGED										
% assigning high competence	11.4%	69.0%	74.8%	92.3%	*	*	*			
(Median assigned competence)	3.5	8.5	8.7	9.0						
33. EVALUATE NONSPEAKING										
% assigning high competence	15.2%	79.5%	67.3%	61.5%	*	*	*		†	
(Median assigned competence)	4.9	8.6	8.1	7.8						
34. EVALUATE PERSONS MULTIPLE HANDICAPS										
% assigning high competence	26.3%	73.9%	68.9%	53.8%	*	*			†	†
(Median assigned competence)	6.3	8.3	8.4	7.6						
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.										
% assigning high competence	50.3%	76.1%	74.6%	89.3%	*	*				
(Median assigned competence)	7.5	9.1	8.7	8.1						
36. WORK WITH BILINGUAL/BICULTURAL										
% assigning high competence	17.0%	29.5%	20.8%	2.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	5.2	5.3	5.0	5.0						
37. TREAT NONSPEAKING PERSONS										
% assigning high competence	19.3%	67.4%	63.6%	50.0%	*	*	†		†	
(Median assigned competence)	5.3	8.2	8.1	7.5						
38. TREAT MULTIPLE HANDICAPS										
% assigning high competence	29.4%	69.6%	71.7%	41.7%	*	*				†
(Median assigned competence)	6.2	8.1	8.4	7.3						

[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by clinical supervisors to rate the "average" member of their speech-language pathology staff.

[2] *: Significantly different pair at $\alpha =$ .01, with Mann-Whitney U Tests
†: Significantly different pair at $\alpha =$ .05, with Mann-Whitney U Tests

TABLE 18. PERCENTAGE OF CLINICAL SUPERVISORS ASSIGNING HIGH COMPETENCE TO AUDIOLOGY STAFF AND MEDIAN ASSIGNED COMPETENCE BY SETTING AND BY SKILL, AND RESULTS OF NONPARAMETRIC DIFFERENCE TESTS BY SKILL[1]

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	61	38	118	13	NA	NA	NA	NA	NA	NA
GENERAL SKILLS										
1. IDENTIFY HIGH RISK										
% assigning high competence	74.5%	84.4%	80.0%	91.7%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.4	9.0	8.4	8.2						
2. EVALUATE SCREENING TOOLS										
% assigning high competence	72.7%	81.3%	75.9%	90.9%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.2	8.7	8.5	9.0						
3. EVALUATE ASSESSMENT TOOLS										
% assigning high competence	70.9%	84.4%	77.7%	83.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.2	8.9	8.6	8.7						
4. COMMUNICATE FINDINGS TO PROFESSIONALS										
% assigning high competence	81.8%	93.9%	85.0%	91.7%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.7	8.8	8.8	8.8						
5. ESTABLISH IND. TREATMENT PLANS										
% assigning high competence	60.0%	78.1%	71.2%	91.7%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	7.9	8.3	8.2	8.7						
6. SELECT INDS. FOR CASELOAD										
% assigning high competence	47.2%	73.3%	66.1%	80.0%	†	*	†			
(Median assigned competence)	7.3	8.4	8.1	8.5						
7. COLLABORATE OTHER PROFESSIONALS										
% assigning high competence	60.0%	87.1%	75.0%	83.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.1	8.7	8.5	8.9						
8. USE CONTEMPORARY TECHNOLOGY										
% assigning high competence	32.7%	45.5%	35.8%	33.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	5.6	6.8	6.2	6.8						
9. DEVELOP PROGNOSTIC STATEMENTS										
% assigning high competence	58.2%	79.4%	71.9%	90.9%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	7.9	8.6	8.2	8.1						

TABLE 18 (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVER-SITY (2)	NON-UNI-VERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	61	38	118	13	NA	NA	NA	NA	NA	NA
10. USE ONGOING ASSESSMENT DATA										
% assigning high competence	60.0%	75.0%	71.2%	81.8%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	7.9	8.2	8.2	8.2						
11. DELIVER SERVICES RURAL SETTINGS										
% assigning high competence	63.8%	40.0%	40.9%	50.0%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.2	7.0	6.6	7.5						
12. DELIVER SERVICES PRIVATE PRACTICE										
% assigning high competence	48.9%	57.7%	45.2%	83.3%			*		†	*
(Median assigned competence)	7.3	7.8	7.1	9.6						
13. INTERPRET LAWS										
% assigning high competence	51.9%	55.9%	44.5%	66.7%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	7.6	7.7	7.1	7.9						
14. MANAGE FINANCES										
% assigning high competence	12.5%	19.0%	22.2%	50.0%	*	*	†			
(Median assigned competence)	3.3	6.0	5.6	7.5						
SKILLS IN WORKING WITH VARIOUS DISORDER										
15. PROVIDE AMPLIFICATION SERVICES										
% assigning high competence	75.9%	94.3%	93.0%	83.3%	*	*				
(Median assigned competence)	8.7	9.7	9.5	9.3						
16. EVALUATE CHILDREN LANGUAGE DIS.										
% assigning high competence	19.2%	25.0%	21.6%	50.0%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	4.8	5.3	5.1	7.5						
17. EVALUATE PERSONS ARTIC. DIS.										
% assigning high competence	27.5%	27.3%	22.9%	45.5%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	5.3	5.4	5.5	7.0						
18. EVALUATE AND FUNCTION DET. SITE LESION										
% assigning high competence	53.8%	91.4%	86.0%	91.7%	*	*	†	†		
(Median assigned competence)	7.7	9.5	8.9	9.0						
19. EVALUATE PERSONS FLUENCY DIS.										
% assigning high competence	10.0%	15.2%	15.5%	44.4%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	3.5	4.3	4.0	7.0						

TABLE 18 (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS^2					
		Health Facilities								
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	61	38	118	13	NA	NA	NA	NA	NA	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.										
% assigning high competence	10.0%	12.1%	18.3%	30.0%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	3.4	4.6	4.1	4.5						
21. EVALUATE PERSONS MOTOR SPEECH DIS										
% assigning high competence	9.8%	12.1%	20.6%	40.0%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	3.7	3.3	4.4	6.5						
22. TREAT COMM. PROBLEMS RELATED TO HEARING										
% assigning high competence	50.0%	76.5%	69.4%	72.7%	†	*				
(Median assigned competence)	7.5	8.5	8.4	8.3						
23. TREAT CHILDREN LANGUAGE DIS.										
% assigning high competence	13.7%	10.0%	14.3%	28.6%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	4.7	3.5	3.8	5.3						
24. TREAT PERSONS ARTIC DIS.										
% assigning high competence	20.4%	13.3%	14.9%	33.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	4.6	3.5	4.0	6.3						
25. WORK WITH HEARING-IMPAIRED INFANT										
% assigning high competence	52.9%	66.7%	57.8%	77.8%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	7.6	8.2	7.8	8.1						
26. TREAT PERSONS FLUENCY DISORDERS										
% assigning high competence	6.3%	3.23%	8.0%	28.6%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	2.4	2.3	2.9	6.8						
27. TREAT PERSONS PHONATION/RES. DIS.										
% assigning high competence	8.2%	3.2%	10.0%	28.6%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	2.8	2.3	3.2	4.0						
28. TREAT PERSONS MOTOR SPEECH DIS.										
% assigning high competence	8.16%	6.5%	10.9%	37.5%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	2.9	2.4	3.2	4.5						
SKILLS IN WORKING WITH SPECIAL POP.										
29. WORK WITH CLIENTS' FAMILIES.										
% assigning high competence	69.1%	88.6%	82.5%	83.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.5	9.1	8.8	9.0						

TABLE 18 (continued)

SKILL	SETTING				RESULTS OF DIFFERE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVER-SITY (2)	NON-UNI-VERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	61	38	118	13	NA	NA	NA	NA	NA	NA
30. WORK WITH PRESCHOOL CHILDREN										
% assigning high competence	69.8%	75.8%	68.6%	75.0%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.4	9.0	8.4	8.3						
31. WORK WITH ADOLESCENTS										
% assigning high competence	72.7%	78.8%	76.4%	83.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	8.3	8.8	8.4	8.8						
32. WORK WITH AGED										
% assigning high competence	47.7%	93.8%	91.2%	91.7%	*	*	*			
(Median assigned competence)	7.3	9.6	9.3	9.6						
33. EVALUATE NONSPEAKING										
% assigning high competence	41.5%	58.8%	65.8%	58.3%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	6.9	8.5	8.4	7.8						
34. EVALUATE PERSONS MULTIPLE HANDICAPS										
% assigning high competence	46.3%	64.7%	69.0%	63.6%		*				
(Median assigned competence)	7.3	8.0	8.4	8.3						
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.										
% assigning high competence	35.8%	35.5%	45.1%	72.7%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	6.3	6.3	7.0	7.9						
36. WORK WITH BILINGUAL/BICULTURAL										
% assigning high competence	22.6%	38.2%	26.2%	44.4%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	5.8	6.5	5.2	7.3						
37. TREAT NONSPEAKING PERSONS										
% assigning high competence	35.3%	48.5%	46.7%	50.0%	NS	NS	NS	NS	NS	NS
(Median assigned competence)	6.0	7.0	7.3	7.5						
38. TREAT MULTIPLE HANDICAPS										
% assigning high competence	33.3%	39.4%	56.5%	50.0%		*		†		
(Median assigned competence)	6.2	6.6	7.8	7.5						

[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by clinical supervisors to rate the "average" member of their audiology staff.

[2] *: Significantly different pair at α= .01, with Mann-Whitney U Tests
†: Significantly different pair at α= .05, with Mann-Whitney U Tests

TABLE 19. PERCENTAGE OF CLINICAL SUPERVISORS ASSIGNING HIGH COMPETENCE TO STAFF AND MEDIAN ASSIGNED COMPETENCE BY TYPE OF STAFF AND SKILL[1]

SKILL	TYPE OF STAFF	
	SPEECH-LANGUAGE PATHOLOGY	AUDIOLOGY
NUMBER OF CASES	394	240
GENERAL SKILLS		
1. IDENTIFY HIGH RISK		
% assigning high competence	81.4%	79.4%
(Median assigned competence)	8.7	8.4
2. EVALUATE SCREENING TOOLS		
% assigning high competence	63.0%	76.7%
(Median assigned competence)	7.9	8.4
3. EVALUATE ASSESSMENT TOOLS		
% assigning high competence	63.4%	77.3%
(Median assigned competence)	7.9	8.5
4. COMMUNICATE FINDINGS TO PROFESSIONALS		
% assigning high competence	78.0%	85.1%
(Median assigned competence)	8.5	8.8
5. ESTABLISH IND. TREATMENT PLANS		
% assigning high competence	83.4%	69.9%
(Median assigned competence)	8.7	8.2
6. SELECT INDS. FOR CASELOAD		
% assigning high competence	84.9%	62.1%
(Median assigned competence)	8.8	8.0
7. COLLABORATE OTHER PROFESSIONALS		
% assigning high competence	72.8%	72.6%
(Median assigned competence)	8.4	8.5
8. USE CONTEMPORARY TECHNOLOGY		
% assigning high competence	24.3%	35.8%
(Median assigned competence)	5.3	6.1
9. DEVELOP PROGNOSTIC STATEMENTS		
% assigning high competence	54.3%	69.1%
(Median assigned competence)	7.6	8.1

TABLE 19 (continued)

SKILL	TYPE OF STAFF	
	SPEECH-LANGUAGE PATHOLOGY	AUDIOLOGY
NUMBER OF CASES	394	240
10. USE ONGOING ASSESSMENT DATA		
% assigning high competence	66.8%	70.2%
(Median assigned competence)	8.1	8.1
11. DELIVER SERVICES RURAL SETTINGS		
% assigning high competence	51.0%	48.6%
(Median assigned competence)	7.6	7.4
12. DELIVER SERVICES PRIVATE PRACTICE		
% assigning high competence	37.7%	51.1%
(Median assigned competence)	6.2	7.6
13. INTERPRET LAWS		
% assigning high competence	46.7%	49.3%
(Median assigned competence)	7.3	7.4
14. MANAGE FINANCES		
% assigning high competence	11.2%	21.8%
(Median assigned competence)	4.1	5.2
SKILLS IN WORKING WITH VARIOUS DISORDERS		
15. PROVIDE AMPLIFICATION SERVICES		
% assigning high competence	21.1%	87.5%
(Median assigned competence)	4.7	9.3
16. EVALUATE CHILDREN LANGUAGE DIS.		
% assigning high competence	74.6%	24.4%
(Median assigned competence)	8.5	5.2
17. EVALUATE PERSONS ARTIC. DIS.		
% assigning high competence	92.2%	26.3%
(Median assigned competence)	9.3	5.4
18. EVALUATE AUD. FUNCTION DET. SITE LESION		
% assigning high competence	12.6%	77.9%
(Median assigned competence)	2.4	8.8
19. EVALUATE PERSONS FLUENCY DIS.		
% assigning high competence	50.0%	15.7%
(Median assigned competence)	7.5	4.0%

TABLE 19 (continued)

SKILL	TYPE OF STAFF	
	SPEECH-LANGUAGE PATHOLOGY	AUDIOLOGY
NUMBER OF CASES	340	240
20. EVALUATE PERSONS PHONATION/RESON. DIS.		
% assigning high competence	46.9%	16.5%
(Median assigned competence)	7.3	3.9
21. EVALUATE PERSONS MOTOR SPEECH DIS.		
% assigning high competence	56.7%	18.1%
(Median assigned competence)	7.8	4.1
22. TREAT COMM. PROBLEMS RELATED TO HEARING		
% assigning high competence	41.0%	66.7%
(Median assigned competence)	7.1	8.2
23. TREAT CHILDREN LANGUAGE DIS.		
% assigning high competence	67.1%	15.9%
(Median assigned competence)	8.6	4.3
24. TREAT PERSONS ARTIC DIS.		
% assigning high competence	91.4%	17.7%
(Median assigned competence)	9.2	4.2
25. WORK WITH HEARING-IMPAIRED INFANTS		
% assigning high competence	18.4%	58.8%
(Median assigned competence)	4.4	7.8
26. TREAT PERSONS FLUENCY DISORDERS		
% assigning high competence	44.1%	8.2%
(Median assigned competence)	7.1	2.7
27. TREAT PERSONS PHONATION/RES. DIS.		
% assigning high competence	42.2%	10.2%
(Median assigned competence)	7.1	3.0
28. TREAT PERSONS MOTOR SPEECH DIS.		
% assigning high competence	52.5%	11.6%
(Median assigned competence)	7.6	3.1
SKILLS IN WORKING WITH SPECIAL POP.		
29. WORK WITH CLIENTS' FAMILIES.	67.0%	79.1%
% assigning high competence	8.1	8.7
(Median assigned competence)		

TABLE 19 (continued)

SKILL	TYPE OF STAFF	
	SPEECH-LANGUAGE PATHOLOGY	AUDIOLOGY
NUMBER OF CASES		
30. WORK WITH PRESCHOOL CHILDREN		
% assigning high competence	61.8%	69.8%
(Median assigned competence)	8.1	8.5
31. WORK WITH ADOLESCENTS		
% assigning high competence	53.7%	75.8%
(Median assigned competence)	7.6	8.4
32. WORK WITH AGED		
% assigning high competence	52.2%	82.5%
(Median assigned competence)	7.6	9.1
33. EVALUATE NONSPEAKING		
% assigning high competence	47.9%	58.4%
(Median assigned competence)	7.3	8.0
34. EVALUATE PERSONS MULTIPLE HANDICAPS		
% assigning high competence	52.3%	62.4%
(Median assigned competence)	7.6	8.0
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.		
% assigning high competence	65.2%	43.2%
(Median assigned competence)	8.1	6.8
36. WORK WITH BILINGUAL/BICULTURAL		
% assigning high competence	19.7%	27.8%
(Median assigned competence)	5.0	5.4
37. TREAT NONSPEAKING PERSONS		
% assigning high competence	46.7%	44.3%
(Median assigned competence)	7.3	7.0
38. TREAT MULTIPLE HANDICAPS		
% assigning high competence	53.5%	48.3%
(Median assigned competence)	7.7	7.4

[1] "High Competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by clinical supervisors to rate their "average" member of each type of staff.

TABLE 20 (Continued)

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	231	297	108
20. EVALUATE PERSONS PHONATION/RESON. DIS.			
% assigning high competence	7.1%	71.0%	4.7%
(Median assigned competence)	3.4	8.2	3.8
21. EVALUATE PERSONS MOTOR SPEECH DIS.			
% assigning high competence	3.2%	58.3%	6.3%
(Median assigned competence)	2.5	7.8	3.7
22. TREAT COMM. PROBLEMS RELATED TO HEARING			
% assigning high competence	9.3%	53.3%	70.1%
(Median assigned competence)	4.1	7.6	8.4
23. TREAT CHILDREN LANGUAGE DIS.			
% assigning high competence	25.6%	86.5%	18.8%
(Median assigned competence)	5.9	9.0	5.2
24. TREAT PERSONS ARTIC DIS.			
% assigning high competence	41.1%	90.5%	21.0%
(Median assigned competence)	6.9	9.1	5.3
25. WORK WITH HEARING-IMPAIRED INFANTS			
% assigning high competence	3.2%	25.5%	63.2%
(Median assigned competence)	2.0	6.2	8.0
26. TREAT PERSONS FLUENCY DISORDERS			
% assigning high competence	6.7%	68.8%	4.8%
(Median assigned competence)	3.4	8.1	3.1
27. TREAT PERSONS PHONATION/RES. DIS.			
% assigning high competence	6.7%	64.8%	4.8%
(Median assigned competence)	3.3	8.0	3.2
28. TREAT PERSONS MOTOR SPEECH DIS.			
% assigning high competence	3.1%	55.8%	4.8%
(Median assigned competence)	2.6	7.7	3.1
SKILLS IN WORKING WITH SPECIAL POP.			
29. WORK WITH CLIENTS' FAMILIES.			
% assigning high competence	14.5%	70.8%	67.1%
(Median assigned competence)	4.9	8.2	8.1

TABLE 20 (continued)

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	231	297	108
30. WORK WITH PRESCHOOL CHILDREN			
% assigning high competence	31.6%	86.7%	71.1%
(Median assigned competence)	6.4	8.9	8.4
31. WORK WITH ADOLESCENTS			
% assigning high competence	15.9%	66.7%	64.9%
(Median assigned competence)	5.1	8.0	8.1
32. WORK WITH AGED			
% assigning high competence	8.0%	60.8%	77.3%
(Median assigned competence)	3.4	7.9	8.7
33. EVALUATE NONSPEAKING			
% assigning high competence	3.1%	35.9%	39.4%
(Median assigned competence)	2.4	6.8	6.5
34. EVALUATE PERSONS MULTIPLE HANDICAPS			
% assigning high competence	2.7%	37.4%	33.3%
(Median assigned competence)	2.8	6.9	6.6
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.			
% assigning high competence	12.1%	71.4%	31.8%
(Median assigned competence)	4.5	8.2	6.4
36. WORK WITH BILINGUAL/BICULTURAL			
% assigning high competence	6.28%	23.0%	11.3%
(Median assigned competence)	2.5	5.4	5.1
37. TREAT NONSPEAKING PERSONS			
% assigning high competence	3.6%	35.7%	18.6%
(Median assigned competence)	2.6	6.7	5.6
38. TREAT MULTIPLE HANDICAPS			
% assigning high competence	3.1%	39.3%	25.4%
(Median assigned competence)	3.1	7.0	6.0

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[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by college and university supervisors to rate their "average" student they supervised upon graduation.

TABLE 21. PERCENTAGE OF COLLEGE AND UNIVERSITY SUPERVISORS ASSIGNING HIGH COMPETENCE TO GRADUATE LEVEL GRADUATES AND MEDIAN ASSIGNED COMPETENCE BY TYPE OF GRADUATE PROGRAM AND BY SKILL[1]

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFF. TEST[2]	ETB	NON-ETB	DIFF. TEST[2]
NUMBER OF CASES	240	53	NA	87	19	NA
GENERAL SKILLS						
1. IDENTIFY HIGH RISK						
% assigning high competence	82.8%	73.1%		63.9%	76.9%	
(Median assigned competence)	8.6	8.4		8.0	8.6	
2. EVALUATE SCREENING TOOLS						
% assigning high competence	62.7%	67.9%		61.7%	69.2%	
(Median assigned competence)	7.9	8.1		7.9	8.6	
3. EVALUATE ASSESSMENT TOOLS						
% assigning high competence	66.7%	60.0%		59.7%	61.5%	
(Median assigned competence)	8.1	8.1		7.8	8.3	
4. COMMUNICATE FINDINGS TO PROFESSIONALS						
% assigning high competence	70.5%	71.7%		70.5%	100%	
(Median assigned competence)	8.2	8.4		8.2	8.9	
5. ESTABLISH IND. TREATMENT PLANS						
% assigning high competence	82.2%	69.9%		48.3%	76.9%	†
(Median assigned competence)	8.9	8.8		7.4	8.6	
6. SELECT INDS. FOR CASELOAD						
% assigning high competence	88.1%	81.1%		49.1%	76.9%	†
(Median assigned competence)	8.9	8.8		7.4	8.6	
7. COLLABORATE OTHER PROFESSIONALS						
% assigning high competence	67.6%	71.7%		56.7%	84.6%	
(Median assigned competence)	8.0	8.1		7.7	9.0	
8. USE CONTEMPORARY TECHNOLOGY						
% assigning high competence	20.9%	17.0%		24.1%	30.8%	
(Median assigned competence)	5.5	5.3		5.7	5.4	
9. DEVELOP PROGNOSTIC STATEMENTS						
% assigning high competence	61.1%	60.4%		55.0%	84.6%	
(Median assigned competence)	7.9	7.8		7.6	8.4	

TABLE 21 (continued)

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFF. TEST^2	ETB	NON-ETB	DIFF. TEST^2
NUMBER OF CASES	240	53	NA	87	19	NA
10. USE ONGOING ASSESSMENT DATA						
% assigning high competence	77.4%	73.6%		44.8%	61.5%	
(Median assigned competence)	8.5	8.2		7.3	8.0	
11. DELIVER SERVICES RURAL SETTINGS						
% assigning high competence	59.0%	66.7%		46.4%	76.9%	
(Median assigned competence)	8.0	8.2		7.3	8.1	
12. DELIVER SERVICES PRIVATE PRACTICE						
% assigning high competence	41.9%	46.2%		36.8%	53.8%	
(Median assigned competence)	6.9	7.3		6.7	7.7	
13. INTERPRET LAWS						
% assigning high competence	51.9%	60.4%		33.9%	61.5%	†
(Median assigned competence)	7.6	7.8		6.6	7.8	
14. MANAGE FINANCES						
% assigning high competence	9.8%	17.3%		12.5%	15.4%	
(Median assigned competence)	4.5	5.7		5.0	6.6	
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. PROVIDE AMPLIFICATION SERVICES						
% assigning high competence	15.5%	14.9%		83.9%	92.3%	
(Median assigned competence)	4.9	5.2		8.8	9.1	
16. EVALUATE CHILDREN LANGUAGE DIS.						
% assigning high competence	88.8%	80.8%		13.5%	27.3%	
(Median assigned competence)	8.9	8.8		5.3	6.7	
17. EVALUATE PERSONS ARTIC. DIS.						
% assigning high competence	90.7%	86.5%		17.0%	18.2%	
(Median assigned competence)	9.3	9.1		5.5	6.3	
18. EVALUATE AUD. FUNCTION DET. SITE LESION						
% assigning high competence	NO DATA AVAILABLE					
(Median assigned competence)						
19. EVALUATE PERSONS FLUENCY DIS.						
% assigning high competence	77.7%	71.7%		5.9%	18.2%	
(Median assigned competence)	8.6	8.3		4.0	5.8	

TABLE 21 (continued)

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFF. TEST^2	ETB	NON-ETB	DIFF. TEST^2
NUMBER OF CASES	240	53	NA	87	19	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.						
% assigning high competence	72.9%	65.4%	†	3.9%	9.1%	
(Median assigned competence)	8.3	7.9		3.6	4.8	
21. EVALUATE PERSONS MOTOR SPEECH DIS.						
% assigning high competence	60.1%	51.9%		5.56%	9.1%	
(Median assigned competence)	7.8	7.6		3.6	4.3	
22. TREAT COMM. PROBLEMS RELATED TO HEARING						
% assigning high competence	52.9%	55.8%		66.7%	84.6%	
(Median assigned competence)	7.6	7.7		8.2	8.9	
23. TREAT CHILDREN LANGUAGE DIS.						
% assigning high competence	87.4%	84.6%		18.5%	27.3%	
(Median assigned competence)	9.0	8.9		5.2	6.0	
4. TREAT PERSONS ARTIC DIS.						
% assigning high competence	91.5%	86.5%		21.2%	27.3%	
(Median assigned competence)	9.2	9.0		5.3	6.0	
25. WORK WITH HEARING-IMPAIRED INFANTS						
% assigning high competence	25.3%	22.4%		61.3%	69.2%	
(Median assigned competence)	6.1	6.1		7.9	8.0	
26. TREAT PERSONS FLUENCY DISORDERS						
% assigning high competence	70.6%	64.2%	†	3.9%	9.1%	
(Median assigned competence)	8.2	7.9		2.9	4.7	
27. TREAT PERSONS PHONATION/RES. DIS.						
% assigning high competence	67.1%	57.7%	†	7.6%	0.0%	
(Median assigned competence)	8.0	7.7		3.1	4.0	
28. TREAT PERSONS MOTOR SPEECH DIS.						
% assigning high competence	57.1%	51.9%		5.8%	0.0%	
(Median assigned competence)	7.7	7.6		3.0	3.4	
SKILLS IN WORKING WITH SPECIAL POP.						
29. WORK WITH CLIENTS' FAMILIES.						
% assigning high competence	71.1%	69.2%		64.5%	84.6%	
(Median assigned competence)	8.2	8.2		8.1	8.1	

TABLE 21 (continued)

SKILL	TYPE OF GRADUATE PROGRAM					
	SPEECH-LANGUAGE PATHOLOGY			AUDIOLOGY		
	ETB	NON-ETB	DIFF. TEST[2]	ETB	NON-ETB	DIFF. TEST[2]
NUMBER OF CASES	240	53	NA	87	19	NA
30. WORK WITH PRESCHOOL CHILDREN						
% assigning high competence	87.7%	82.7%		67.7%	92.3%	
(Median assigned competence)	8.9	9.0		8.2	9.4	
31. WORK WITH ADOLESCENTS						
% assigning high competence	66.8%	67.9%		63.3%	76.9%	
(Median assigned competence)	8.0	8.1		8.1	8.4	
32. WORK WITH AGED						
% assigning high competence	63.4%	56.9%		78.7%	84.6%	
(Median assigned competence)	8.0	7.8		8.7	9.1	
33. EVALUATE NONSPEAKING						
% assigning high competence	37.9%	30.8%		39.7%	41.7%	
(Median assigned competence)	6.9	6.8		6.4	7.2	
34. EVALUATE PERSONS MULTIPLE HANDICAPS						
% assigning high competence	38.6%	35.8%		33.9%	41.7%	
(Median assigned competence)	6.9	7.1		6.6	7.0	
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.						
% assigning high competence	71.8%	69.2%		34.5%	36.4%	
(Median assigned competence)	8.2	8.1		6.6	6.0	
36. WORK WITH BILINGUAL/BICULTURAL						
% assigning high competence	22.4%	30.2%		16.9%	0.0	
(Median assigned competence)	5.5	5.2		5.2	5.1	
37. TREAT NONSPEAKING PERSONS						
% assigning high competence	35.5%	34.6%		21.1%	16.7%	
(Median assigned competence)	6.7	6.8		5.8	6.0	
38. TREAT MULTIPLE HANDICAPS						
% assigning high competence	40.0%	37.7%		24.1%	41.7%	
(Median assigned competence)	7.0	7.1		6.1	6.5	

[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale used by college and university supervisors to rate the "average" student they supervised upon graduation.

[2] *: Significantly different pair at $\alpha = .01$, with Mann-Whitney U. Tests.
†: Significantly different pair at $\alpha = .05$, with Mann-Whitney U. Tests.

TABLE 20. PERCENTAGE OF COLLEGE AND UNIVERSITY SUPERVISORS ASSIGNING HIGH COMPETENCE TO GRADUATES AND MEDIAN ASSIGNED COMPETENCE BY TYPE OF DEGREE AND SKILL[1]

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	231	297	108
GENERAL SKILLS			
1. IDENTIFY HIGH RISK			
% assigning high competence	25.6%	81.2%	64.5%
(Median assigned competence)	6.0	8.5	8.1
2. EVALUATE SCREENING TOOLS			
% assigning high competence	15.9%	63.6%	61.3%
(Median assigned competence)	5.0	8.0	7.9
3. EVALUATE ASSESSMENT TOOLS			
% assigning high competence	11.1%	66.9%	58.4%
(Median assigned competence)	4.9	8.1	7.8
4. COMMUNICATE FINDINGS TO PROFESSIONALS			
% assigning high competence	12.0%	70.7%	73.7%
(Median assigned competence)	4.7	8.2	8.3
5. ESTABLISH IND. TREATMENT PLANS			
% assigning high competence	27.9%	85.1%	52.0%
(Median assigned competence)	6.2	8.9	7.6
6. SELECT INDS. FOR CASELOAD			
% assigning high competence	27.2%	86.7%	52.8%
(Median assigned competence)	6.2	8.9	7.6
7. COLLABORATE OTHER PROFESSIONALS			
% assigning high competence	10.6%	68.8%	61.3%
(Median assigned competence)	4.7	8.0	7.9
8. USE CONTEMPORARY TECHNOLOGY			
% assigning high competence	1.35%	19.7%	24.7%
(Median assigned competence)	2.2	5.4	5.6
9. DEVELOP PROGNOSTIC STATEMENTS			
% assigning high competence	10.2%	60.9%	58.7%
(Median assigned competence)	4.6	7.9	7.7

TABLE 20 (Continued)

SKILL	TYPE OF DEGREE		
	UNDER GRADUATE	GRADUATE SLP	GRADUATE AUD
NUMBER OF CASES	231	297	108
10. USE ONGOING ASSESSMENT DATA			
% assigning high competence	22.0%	77.2%	47.9%
(Median assigned competence)	5.5	8.5	7.4
11. DELIVER SERVICES RURAL SETTINGS			
% assigning high competence	19.7%	61.3%	51.4%
(Median assigned competence)	4.9	8.1	7.6
12. DELIVER SERVICES PRIVATE PRACTICE			
% assigning high competence	4.98%	42.4%	38.0%
(Median assigned competence)	2.6	7.0	6.6
13. INTERPRET LAWS			
% assigning high competence	18.8%	53.7%	39.2%
(Median assigned competence)	5.1	7.6	6.9
14. MANAGE FINANCES			
% assigning high competence	1.4%	11.4%	11.4%
(Median assigned competence)	1.6	4.7	5.1
SKILLS IN WORKING WITH VARIOUS DISORDERS			
15. PROVIDE AMPLIFICATION SERVICES			
% assigning high competence	4.3%	15.9%	84.4%
(Median assigned competence)	2.3	5.0	8.9
16. EVALUATE CHILDREN LANGUAGE DIS.			
% assigning high competence	20.8%	86.9%	15.6%
(Median assigned competence)	5.5	8.9	5.3
17. EVALUATE PERSONS ARTIC. DIS.			
% assigning high competence	36.3%	89.5%	16.9%
(Median assigned competence)	6.7	9.2	5.5
18. EVALUATE AUD. FUNCTION DET. SITE LESION			
% assigning high competence	NO DATA AVAILABLE		
(Median assigned competence)			
19. EVALUATE PERSONS FLUENCY DIS.			
% assigning high competence	9.73%	75.7%	7.9%
(Median assigned competence)	3.8	8.5	4.1

TABLE 1. PERCENTAGE OF PRACTITIONERS SELF-RATINGS OF HIGH COMPETENCE[1] AND MEDIAN COMPETENCE BY TYPE OF PRACTITIONER AND SKILL, AND RESULTS OF NONPARAMETRIC TESTS BY SKILL

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	B.A. NON MEMBER (1)	CCC-SP (2)	CCC-A (3)	1 and 2	1 and 3	2 and 3
NUMBER OF CASES[3]	366	597	577	NA	NA	NA
GENERAL SKILLS						
1. IDENTIFY HIGH RISK						
% with high competence	56%	61.9%	64.9%	*	*	
(Median competence)	7.7	8.1	8.2			
2. EVALUATE SCREENING TOOLS						
% with high competence	37.6%	48.1%	42.5%	*		*
(Median competence)	6.8	6.4	6.9			
3. EVALUATE ASSESSMENT TOOLS						
% with high competence	36.6%	55.2%	42.5%	*		*
(Median competence)	6.9	6.7	6.9			
4. COMMUNICATE FINDINGS TO PROFESSIONALS						
% with high competence	57.5%	81.1%	90.9%	*	*	*
(Median competence)	7.8	8.8	9.4			
5. ESTABLISH IND. TREATMENT PLANS						
% with high competence	78.2%	89.6%	54.1%	*	*	*
(Median competence)	8.5	9.0	7.7			
6. SELECT INDS. FOR CASELOAD						
% with high competence	85.9%	91.8%	44.6%	*	*	*
(Median competence)	8.9	9.1	7.0			
7. COLLABORATE OTHER PROFESSIONALS						
% with high competence	58.6%	80.7%	79.2%	*	*	
(Median competence)	7.9	8.8	8.8			
8. USE CONTEMPORARY TECHNOLOGY						
% with high competence	4.7%	7.5%	16.4%	*	*	*
(Median competence)	1.6	2.4	3.3			
9. DEVELOP PROGNOSTIC STATEMENTS						
% with high competence	36.0%	53.4%	57.5%	*	*	
(Median competence)	6.7	7.6	7.8			

TABLE 1 (continued)

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS^2		
	B.A. NON MEMBER (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
NUMBER OF CASES						
10. USE ONGOING ASSESSMENT DATA						
% with high competence	72.7%	78.9%	45.1%	*	*	*
(Median competence)	8.3	8.5	7.2			
11. DELIVER SERVICES RURAL SETTINGS						
% with high competence	49.0%	39.3%	41.1%	*	†	
(Median competence)	7.4	5.7	6.3			
12. DELIVER SERVICES PRIVATE PRACTICE						
% with high competence	13.8%	37.7%	57.7%	*	*	*
(Median competence)	3.1	6.0	8.1			
13. INTERPRET LAWS						
% with high competence	50.6%	41.8%	29.5%	*	*	*
(Median competence)	7.5	6.7	5.8			
14. MANAGE FINANCES						
% with high competence	2.8%	11.6%	26.9%	*	*	*
(Median competence)	1.4	2.4	4.9			
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. PROVIDE AMPLIFICATION SERVICES						
% with high competence	6.1%	5.79%	88.5%	†	*	*
(Median competence)	2.3	1.7	9.4			
16. EVALUATE CHILDREN LANGUAGE DIS.						
% with high competence	61.3%	79.8%	12.4%	*	*	*
(Median competence)	7.9	8.8	3.3			
17. EVALUATE PERSONS ARTIC. DIS.						
% with high competence	92.3%	92.4%	13.5%		*	*
(Median competence)	9.4	9.4	3.5			
18. EVALUATE AUD. FUNCTION DET. SITE LESION						
% with high competence	3.6 %	6.0 %	86.6%		*	*
(Median competence)	1.7	1.4	9.3			
19. EVALUATE PERSONS FLUENCY DIS.						
% with high competence	29.6%	47.9%	5.6%	*	*	*
(Median competence)	6.5	7.4	2.0			

TABLE 1 (continued)

	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
SKILL	B.A. NON MEMBER (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
NUMBER OF CASES						
20. EVALUATE PERSONS PHONATION/RESON. DIS.						
% with high competence	16.6%	38.6%	3.3%	*	*	*
(Median competence)	5.2	6.9	1.4			
21. EVALUATE PERSONS MOTOR SPEECH DIS.						
% with high competence	14.4%	45.5%	6.4%	*	*	*
(Median competence)	4.7	7.2	1.7			
22. TREAT COMM. PROBLEMS RELATED TO HEARING						
% with high competence	24.0%	34.7%	7.7%	*	*	*
(Median competence)	6.0	6.6	8.7			
23. TREAT CHILDREN LANGUAGE DIS.						
% with high competence	69.6%	83.2%	9.7%	*	*	*
(Median competence)	8.2	8.9	2.4			
24. TREAT PERSONS ARTIC DIS.						
% with high competence	93.1%	92.9%	12.2%		*	*
(Median competence)	9.2	9.3	3.0			
25. WORK WITH HEARING-IMPAIRED INFANTS						
% with high competence	7.3%	11.2%	56.7%	*	*	*
(Median competence)	1.9	2.3	7.8			
26. TREAT PERSONS FLUENCY DISORDERS						
% with high competence	21.8%	36.9%	4.7%	*	*	*
(Median competence)	5.9	6.7	1.5			
27. TREAT PERSONS PHONATION/RES. DIS.						
% with high competence	16.0%	35.7%	3.1%	*	*	*
(Median competence)	5.2	6.8	1.4			
28. TREAT PERSONS MOTOR SPEECH DIS.						
% with high competence	14.2%	47.2%	3.9%	*	*	*
(Median competence)	5.1	7.3	1.4			
SKILLS IN WORKING WITH SPECIAL POP.						
29. WORK WITH CLIENTS' FAMILIES.						
% with high competence	64.9%	81.6%	81.4%	*	*	
(Median competence)	8.1	8.8	8.7			

TABLE 1 (continued)

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TEST[2]		
	B.A. NON MEMBER (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
NUMBER OF CASES						
30. WORK WITH PRESCHOOL CHILDREN % with high competence (Median competence)	64.5% 8.2	75.1% 8.8	76.5% 8.7	*	*	
31. WORK WITH ADOLESCENTS % with high competence (Median competence)	58.3% 7.9	42.9% [illegible].0	77.6% 8.7			
32. WORK WITH AGED % with high competence (Median competence)	13.7% 3.8	47.5% 7.3	85.5% 9.3	*	*	*
33. EVALUATE NONSPEAKING % with high competence (Median competence)	14.2% 4.4	37.8% 6.5	42.9% 7.0	*	*	†
34. EVALUATE PERSONS MULTIPLE HANDICAPS % with high competence (Median competence)	24.0% 5.5	44.0% 7.1	42.9% 7.1	*	*	
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR. % with high competence (Median competence)	52.8% 7.6	69.2% 8.3	23.3% 4.9	*	*	*
36. WORK WITH BILINGUAL/BICULTURAL % with high competence (Median competence)	20.1% 4.6	21.7% 4.9	23.0% 4.9	NS	NS	NS
37. TREAT NONSPEAKING PERSONS % with high competence (Median competence)	18.4% 4.8	37.9% 6.6	22.8% 5.0	*		*
38. TREAT MULTIPLE HANDICAPS % with high competence (Median competence)	29.1% 6.1	44.1% 7.1	25.8% 5.3	*	*	*

[1] "High competence" is defined as an assigned score of 8 or higher on a 1 to 10 self-rated competency scale.

[2] NS: Results not significant at $\alpha = .05$ with Kruskal Wallis One Way Analysis of Variance

*: Significiently different pair at $\alpha = .01$ with Mann-Whitney U Test.

†: Significiently different pair at $\alpha = .05$ with Mann-Whitney U Test.

[3] Number of cases varies slightly between skills due to item nonresponses in this and all tables following; except table 1A.

TABLE 1 A PERCENTAGE OF PRACTITIONERS SELF-RATINGS OF COMPETENCE AND MEDIAN COMPETENCE BY TYPE OF PRACTITIONER AND SKILL AND RESULTS OF NONPARAMETRIC DIFFERENCE TESTS BY SKILL: FREQUENT SKILL USERS[1]

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	B.A. (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
GENERAL SKILLS						
1. IDENTIFY HIGH RISK						
% with high competence	76.7%	82.7%	80.8%	*	*	
(Median competence)	8.3	8.9	8.8			
N of cases	206	329	370			
2. EVALUATE SCREENING TOOLS						
% with high competence	62.7%	75.2%	68.6%	NS	NS	NS
(Median competence)	7.9	8.2	8.1			
N of cases	59	109	105			
3. EVALUATE ASSESSMENT TOOLS						
% with high competence	56.2%	77.9%	72.8%	*	†	
(Median competence)	7.7	8.3	8.3			
N of cases	73	154	147			
4. COMMUNICATE FINDINGS TO PROFESSIONALS						
% with high competence	67.4%	84.0%	91.4%	*	*	*
(Median competence)	8.2	8.9	9.4			
N of cases	215	489	537			
5. ESTABLISH IND. TREATMENT PLANS						
% with high competence	79.4%	90.4%	67.9%	*	*	*
(Median competence)	8.5	9.0	8.2			
N of cases	325	568	364			
6. SELECT INDS. FOR CASELOAD						
% with high competence	90.6%	93.3%	77.1%		*	*
(Median competence)	9.1	9.[illegible]	8.4			
N of cases	286	479	188			
7. COLLABORATE OTHER PROFESSIONALS						
% with high competence	72.0%	86.4%	86.1%	*	*	
(Median competence)	8.4	9.0	9.0			
N of cases	193	434	462			
8. USE CONTEMPORARY TECHNOLOGY						
% with high competence	37.5%	46.3%	59.2%		†	
(Median competence)	7.0	7.3	7.9			
N of cases	32	67	71			
9. DEVELOP PROGNOSTIC STATEMENTS						
% with high competence	57.2%	66.0%	72.4%	*	*	
(Median competence)	7.7	8.1	8.3			
N of cases	166	374	326			

TABLE 1 A (continued)

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	B.A. (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
10. USE ONGOING ASSESSMENT DATA						
% with high competence	77.8%	82.6%	72.7%	†		*
(Median competence)	8.5	8.7	8.2			
N of cases	266	447	165			
11. DELIVER SERVICES RURAL SETTINGS						
% with high competence	91.6%	91.2%	90.1%	NS	NS	NS
(Median competence)	9.1	9.0	9.1			
N of cases	143	113	101			
12. DELIVER SERVICES PRIVATE PRACTICE						
% with high competence	58.3%	85.0%	96.1%		*	*
(Median competence)	8.0	9.2	9.7			
N of cases	12	100	203			
13. INTERPRET LAWS						
% with high competence	73.3%	69.7%	66.4%	NS	NS	NS
(Median competence)	8.3	8.3	8.1			
N of cases	187	221	125			
14. MANAGE FINANCES						
% with high competence	75.0%	56.6%	71.4%			*
(Median competence)	8.0	7.8	8.5			
N of cases	123	319	22			
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. PROVIDE AMPLIFICATION SERVICES						
% with high competence	36.7%	50.0%	94.8%		*	*
(Median competence)	6.8	7.5	9.6			
N of cases	30	30	484			
16. EVALUATE CHILDREN LANGUAGE DIS.						
% with high competence	68.1%	87.7%	48.0%	*	*	*
(Median competence)	8.1	9.0	7.4			
N of cases	295	465	98			
17. EVALUATE PERSONS ARTIC. DIS.						
% with high competence	95.5%	94.3%	42.9%		*	*
(Median competence)	9.5	9.5	6.9			
N of cases	314	489	77			
18. EVALUATE AUD. FUNCTION DET. SITE LESION						
% with high competence	28.6%	71.4%	95.2%	*	*	*
(Median competence)	6.0	8.3	9.6			
N of cases	14	28	460			
19. EVALUATE PERSONS FLUENCY DIS.						
% with high competence	51.0%	70.4%	15.4%	*	*	*
(Median competence)	7.5	8.4	4.7			
N of cases	104	169	13			

TABLE 1 A (continued)

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS^2		
	B.A. (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
20. EVALUATE PERSONS PHONATION/RESON. DIS.						
% with high competence	32.3%	62.2%	38.5%	*		*
(Median competence)	6.9	7.9	5.3			
N of cases	65	196	13			
21. EVALUATE PERSONS MOTOR SPEECH DIS.						
% with high competence	45.5%	75.1%	40.0%	*		*
(Median competence)	7.1	8.5	6.3			
N of cases	44	253	40			
22. TREAT COMM. PROBLEMS RELATED TO HEARING						
% with high competence	44.8%	57.5%	86.7%	†	*	*
(Median competence)	7.3	7.7	9.1			
N of cases	143	200	437			
23. TREAT CHILDREN LANGUAGE DIS.						
% with high competence	71.3%	90.3%	54.2%	*	*	*
(Median competence)	8.2	9.1	7.7			
N of cases	335	476	59			
24. TREAT PERSONS ARTIC DIS.						
% with high competence	95.0%	95.1%	78.1%		*	*
(Median competence)	9.3	9.4	8.3			
N of cases	338	509	32			
25. WORK WITH HEARING IMPAIRED INFANTS						
% with high competence	52.4%	64.3%	73.7%		*	
(Median competence)	7.6	8.1	8.5			
N of cases	21	28	278			
26. TREAT PERSONS FLUENCY DISORDERS						
% with high competence	31.2%	49.6%	46.2%	*		
(Median competence	6.7	7.5	7.0			
N of cases	202	246	13			
27. TREAT PERSONS PHONATION/RES. DIS.						
% with high competence	26.0%	56.9%	54.5%	*		
(Median competence)	6.2	7.7	7.6			
N of cases	123	248	11			
28. TREAT PERSONS MOTOR SPEECH DIS.						
% with high competence	30.1%	65.8%	59.1%	*		
(Median competence)	6.4	8.1	7.8			
N of cases	123	319	22			
SKILLS IN WORKING WITH SPECIAL POP.						
29. WORK WITH CLIENTS' FAMILIES.						
% with high competence	75.5%	87.8%	88.1%	*	*	
(Median competence)	8.5	9.0	9.0			
N of cases	212	458	427			

TABLE 1 A (continued)

SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	B.A. (1)	CCC-SP (2)	CCC-AUD (3)	1 and 2	1 and 3	2 and 3
30. WORK WITH PRESCHOOL CHILDREN						
% with high competence	82.8%	91.5%	89.3%	*		
(Median competence)	8.9	9.3	9.1			
N of cases	157	305	394			
31. WORK WITH ADOLESCENTS						
% with high competence	67.0%	81.3%	87.1%	*	*	*
(Median competence)	8.3	8.7	9.1			
N of cases	221	288	341			
32. WORK WITH AGED						
% with high competence	83.3%	91.3%	95.1%			*
(Median competence)	9.5	9.2	9.6			
N of cases	12	149	429			
33. EVALUATE NONSPEAKING						
% with high competence	45.5%	73.2%	62.1%	*	*	*
(Median competence)	7.2	8.5	8.0			
N of cases	44	194	211			
34. EVALUATE PERSONS MULTIPLE HANDICAPS						
% with high competence	44.6%	69.8%	62.6%	*	*	
(Median competence)	7.2	8.1	8.0			
N of cases	112	255	246			
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.						
% with high competence	62.8%	81.1%	54.2%	*		*
(Median competence)	7.9	8.7	7.7			
N of cases	242	386	153			
36. WORK WITH BILINGUAL/BICULTURAL						
% with high competence	47.8%	47.1%	49.7%	NS	NS	NS
(Median coimpetence)	7.4	7.3	7.5			
N of cases	90	153	153			
37. TREAT NONSPEAKING PERSONS						
% with high competence	42.9%	69.0%	59.0%	*	†	
(Median competence)	7.1	8.2	7.9			
N of cases	84	210	83			
38. TREAT MULTIPLE HANDICAPS						
% with high competence	44.9%	65.0%	59.1%	*	*	
(Median competence)	7.2	8.0	8.0			
N of cases	176	300	110			

[1] Sample for each skill in this table restricted to respondents claiming use of skill on at least a monthly basis on the average in the year preceeding the survey. "High Competence" is defined as a score of 8 or higher on the 1 to 10 self-rated competency scale.

[2] N.S.: Results not significant at $\alpha=.05$, with Kruskal-Wallis One Way Analysis of Variance
*Significantly different pair at $\alpha=.01$, with Mann-Whitney U test.
†Significantly different pair at $\alpha=.05$, with Mann-Whitney U test.

TABLE 6: FREQUENCY OF SKILL USAGE BY TYPE OF PRACTITIONER AND SKILL, AND RESULTS OF NONPARAMETRIC TESTS BY SKILL

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES	366	597	577	NA	NA	NA
GENERAL SKILLS						
1. IDENTIFY HIGH RISK					*	*
Very frequently	24.0%	31.2%	43.2%			
Frequently	37.2	27.5	22.1			
Occasionally	27.3	25.5	22.3			
Not at all	11.4	15.9	12.5			
TOTAL[3]	100.0	100.0	100.0			
2. EVALUATE SCREENING TOOLS					†	*
Very frequently	2.0	3.6	3.9			
Frequently	14.5	15.1	14.8			
Occasionally	62.3	62.8	48.5			
Not at all	21.2	18.4	32.9			
TOTAL[3]	100.0	100.0	100.0			
3. EVALUATE ASSESSMENT TOOLS						†
Very frequently	2.8	5.9	6.0			
Frequently	17.7	20.7	20.4			
Occasionally	64.9	59.4	49.2			
Not at all	14.6	14.0	24.4			
TOTAL[3]	100.0	100.0	100.0			
4. COMMUNICATE FINDINGS TO PROFESSIONALS				*	*	*
Very frequently	22.8	50.8	80.7			
Frequently	36.9	33.0	13.0			
Occasionally	35.8	14.9	4.0			
Not at all	4.4	1.4	2.3			
TOTAL[3]	100.0	100.0	100.0			
5. ESTABLISH IND. TREATMENT PLANS				*	*	*
Very frequently	54.3	65.9	39.4			
Frequently	35.7	28.2	24.2			
Occasionally	9.1	4.4	22.3			
Not at all	.8	1.5	14.1			
TOTAL[3]	100.0	100.0	100.0			
6. SELECT INDS. FOR CASELOAD				*	*	*
Very frequently	37.9	50.1	18.6			
Frequently	41.8	32.0	15.5			
Occasionally	15.3	11.3	20.2			
Not at all	5.0	6.7	45.7			
TOTAL[3]	100.0	100.0	100.0			

TABLE 6 (continued)

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES						
7. COLLABORATE OTHER PROFESSIONALS				*	*	*
Very frequently	22.2%	38.3%	54.4%			
Frequently	31.4	35.9	27.0			
Occasionally	40.8	23.2	14.3			
Not at all	5.6	2.6	4.4			
TOTAL[3]	100.0	100.	100.0			
8. USE CONTEMPORARY TECHNOLOGY				*	*	
Very frequently	3.4	5.5	6.3			
Frequently	5.7	6.1	6.3			
Occasionally	18.7	28.6	30.7			
Not at all	72.2	59.8	56.6			
TOTAL[3]	100.0	100.0	100.0			
9. DEVELOP PROGNOSTIC STATEMENTS				*	*	
Very frequently	14.2	29.0	29.6			
Frequently	32.2	35.2	28.2			
Occasionally	40.8	27.4	27.4			
Not at all	12.8	8.4	14.7			
TOTAL[3]	100.0	100.0	100.0			
10. USE ONGOING ASSESSMENT DATA					*	*
Very frequently	33.7	39.0	14.3			
Frequently	40.4	37.5	15.2			
Occasionally	21.7	19.3	29.7			
Not at all	4.2	4.1	40.8			
TOTAL[3]	100.0	100.0	100.0			
11. DELIVER SERVICES RURAL SETTINGS				*	*	
Very frequently	34.1	15.7	11.3			
Frequently	6.2	3.8	6.6			
Occasionally	7.6	10.9	14.5			
Not at all	52.1	69.7	67.5			
TOTAL[3]	100.0	100.0	100.0			
12. DELIVER SERVICES PRIVATE PRACTICE				*	*	*
Very frequently	2.5	14.2	32.2			
Frequently	.8	2.9	3.5			
Occasionally	3.3	15.7	8.2			
Not at all	93.3	67.2	56.1			
TOTAL[3]	100.0	100.0	100.0			

TABLE 6 (continued)

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES						
13. INTERPRET LAWS				*	*	*
Very frequently	27.4%	16.7%	7.8%			
Frequently	24.9	21.3	14.3			
Occasionally	31.3	41.0	41.1			
Not at all	16.5	21.0	36.9			
TOTAL[3]	100.0	100.0	100.0			
14. MANAGE FINANCES				*	*	*
Very frequently	.8	9.0	20.4			
Frequently	.3	5.4	8.9			
Occasionally	4.5	9.3	15.7			
Not at all	94.4	76.3	55.0			
TOTAL[3]	100.0	100.0	100.0			
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. PROVIDE AMPLIFICATION SERVICES				†	*	*
Very frequently	4.0	2.9	72.6			
Frequently	4.5	2.3	12.0			
Occasionally	17.0	14.2	7.2			
Not at all	74.5	80.6	8.2			
TOTAL[3]	100.0	100.0	100.0			
16. EVALUATE CHILDREN LANGUAGE DIS.					*	*
Very frequently	39.6	49.8	7.8			
Frequently	42.1	29.7	10.3			
Occasionally	15.0	11.9	19.0			
Not at all	3.3	8.5	62.9			
TOTAL[3]	100.0	100.0	100.0			
17. EVALUATE PERSONS ARTIC. DIS.					*	*
Very frequently	47.8	48.9	5.5			
Frequently	39.4	34.9	8.3			
Occasionally	8.3	13.8	15.2			
Not at all	4.4	2.4	71.0			
TOTAL[3]	100.0	100.0	100.0			
18. EVALUATE AUD. FUNCTION DET. SITE LESION					*	*
Very frequently	.6	2.1	61.8			
Frequently	3.8	2.8	18.6			
Occasionally	10.2	6.7	10.5			
Not at all	85.4	88.4	9.1			
TOTAL[3]	100.0	100.0	100.0			

TABLE 6 (continued)

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES						
19. EVALUATE PERSONS FLUENCY DIS.					*	*
Very frequently	9.7%	9.6%	1.1%			
Frequently	19.2	19.3	1.4			
Occasionally	59.4	60.2	10.7			
Not at all	11.7	10.9	86.8			
TOTAL[3]	100.0	100.0	100.0			
20. EVALUATE PERSONS PHONATION/RESON. DIS.				*	*	*
Very frequently	5.9	8.5	1.2			
Frequently	12.3	24.9	1.1			
Occasionally	61.5	59.2	12.6			
Not at all	20.4	7.3	85.1			
TOTAL[3]	100.0	100.0	100.0			
21. EVALUATE PERSONS MOTOR SPEECH DIS.				*	*	*
Very frequently	4.5	20.2	3.7			
Frequently	7.9	23.1	3.9			
Occasionally	52.2	43.1	15.1			
Not at all	35.4	13.7	77.2			
TOTAL[3]	100.0	100.0	100.0			
22. TREAT COMM. PROBLEMS RELATED TO HEARING				†	*	*
Very frequently	29.4	21.1	63.4			
Frequently	10.3	13.0	13.5			
Occasionally	41.7	44.9	12.3			
Not at all	18.6	21.0	10.9			
TOTAL[3]	100.0	100.0	100.0			
23. TREAT CHILDREN LANGAGE DIS.				*	*	*
Very frequently	81.6	73.2	5.8			
Frequently	11.7	8.2	4.8			
Occasionally	2.8	7.3	10.3			
Not at all	3.9	11.3	79.1			
TOTAL[3]	100.0	100.0	100.0			
24. TREAT PERSONS ARTIC DIS.				*	*	*
Very frequently	86.1	71.8	3.7			
Frequently	8.1	15.2	1.9			
Occasionally	2.2	8.0	8.1			
Not at all	3.6	4.9	86.2			
TOTAL[3]	100.0	100.0	100.0			

TABLE 6 (continued)

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES						
25. WORK WITH HEAPING-IMPAIRED INFANTS				*	*	*
Very frequently	4.5%	3.3%	25.1%			
Frequently	1.4	1.5	23.6			
Occasionally	4.7	12.5	30.2			
Not at all	89.4	82.7	21.1			
TOTAL[3]	100.0	100.0	100.0			
26. TREAT PERSONS FLUENCY DISORDERS				*	*	*
Very frequently	44.3	27.4	1.1			
Frequently	11.6	14.9	1.2			
Occasionally	29.1	40.9	2.8			
Not at all	15.0	16.9	94.8			
TOTAL[3]	100.0	100.0	100.0			
27. TREAT PERSONS PHONATION/RES. DIS.				*	*	*
Very frequently	23.5	23.9	.7			
Frequently	10.9	18.5	1.2			
Occasionally	39.2	41.9	4.4			
Not at all	26.3	15.7	93.6			
TOTAL[3]	100.0	100.0	100.0			
28. TREAT PERSONS MOTOR SPEECH DIS.				*	*	*
Very frequently	26.2	39.6	1.8			
Frequently	8.1	14.8	2.1			
Occasionally	30.1	28.5	5.1			
Not at all	35.7	17.1	91.0			
TOTAL[3]	100.0	100.0	100.0			
SKILLS IN WORKING WITH SPECIAL POP.						
29. WORK WITH CLIENTS' FAMILIES.				*	*	
Very frequently	19.6	44.0	42.0			
Frequently	39.7	34.4	32.6			
Occasionally	37.7	19.4	20.6			
Not at all	3.1	2.2	4.9			
TOTAL[3]	100.0	100.0	100.0			
30. WORK WITH PRESCHOOL CHILDREN				*	*	*
Very frequently	34.9	41.0	43.5			
Frequently	8.6	11.1	25.2			
Occasionally	20.2	21.3	17.7			
Not at all	36.3	26.6	13.6			
TOTAL[3]	100.0	100.0	100.0			

TABLE 6 (continued)

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES						
31. WORK WITH ADOLESCENTS				*	*	*
Very frequently	48.9%	34.2%	29.3%			
Frequently	12.5	15.2	30.3			
Occasionally	20.3	25.1	29.8			
Not at all	18.3	25.5	10.6			
TOTAL[3]	100.0	100.0	100.0			
32. WORK WITH AGED				*	*	*
Very frequently	1.7	19.8	58.3			
Frequently	1.7	5.6	16.7			
Occasionally	3.6	13.1	7.1			
Not at all	93.0	61.4	17.9			
TOTAL[3]	100.0	100.0	100.0			
33. EVALUATE NONSPEAKING				*	*	*
Very frequently	5.3	17.9	16.1			
Frequently	7.0	15.2	20.8			
Occasionally	42.1	35.3	47.0			
Not at all	45.5	31.7	16.1			
TOTAL[3]	100.0	100.0	100.0			
34. EVALUATE PERSONS MULTIPLE HANDICAPS				*	*	
Very frequently	9.7	21.2	18.3			
Frequently	21.4	22.4	25.0			
Occasionally	50.3	42.0	48.7			
Not at all	18.6	14.5	8.0			
TOTAL[3]	100.0	100.0	100.0			
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.					*	*
Very frequently	51.0	48.8	14.4			
Frequently	16.4	17.2	12.7			
Occasionally	24.8	20.3	35.4			
Not at all	7.8	13.7	37.5			
TOTAL[3]	100.0	100.0	100.0			
36. WORK WITH BILINGUAL/BICULTURAL					*	*
Very frequently	16.9	15.2	12.1			
Frequently	8.4	11.1	14.9			
Occasionally	25.8	32.4	41.7			
Not at all	48.9	41.3	31.3			
TOTAL[3]	100.0	100.0	100.0			

TABLE 6 (continued)

FREQUENCY[1] BY SKILL	TYPE OF PRACTITIONER			RESULTS OF DIFFERENCE TESTS[2]		
	BA NON-MEMBER (1)	CCC-SLP (2)	CCC-A (3)	1 & 2	1 & 3	2 & 3
NUMBER OF CASES						
37. TREAT NONSPEAKING PERSONS						*
Very frequently	18.3%	24.9%	7.1%			
Frequently	5.6	20.9	7.8			
Occasionally	22.3	26.5	33.5			
Not at all	53.8	37.7	51.6			
TOTAL[3]	100.0	100.0	100.0			
38. TREAT MULTIPLE HANDICAPS					*	*
Very frequently	34.0	33.6	8.9			
Frequently	15.0	17.7	11.2			
Occasionally	28.7	30.4	41.7			
Not at all	22.3	18.3	38.2			
TOTAL[3]	100.0	100.0	100.0			

[1] Very frequent was defined in the questionaire as "at least weekly", frequent was defined as "at least monthly but less than weekly", etc....

[2] NS: Results not significant at $\alpha = .05$ with Kruskal-Wallis One Way Analysis of Variance

*: Significantly different pair at $\alpha = .01$ with Mann-Whitney U Test.

†: Significantly different pair at $\alpha = .05$ with Mann-Whitney U Test.

[3] Percentages often do not total exactly 100.0% due to rounding.

Table 7. Proportion of Bachelor Level Practitioners' Perceptions of Sources of Training in Acquiring Each Skill

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
GENERAL SKILLS						
1. Identify persons at high risk for communication disorders.	359	10.5%	58.5%	27.0%	17.5%	10.6%
2. Evaluate the quality of screening tools for identification.	361	40.4	67.9	23.0	20.8	12.5
3. Evaluate the quality of assessment tools.	360	43.3	69.2	25.6	20.3	11.9
4. Communicate diagnostic findings to other professionals (e.g. psychologists, physicians).	359	38.7	81.3	11.4	9.5	4.7
5. Establish individual treatment plans based on assessment data.	360	64.4	83.1	32.2	22.2	.8
6. Select individuals with communication disorders for inclusion in a caseload.	361	68.7	81.7	19.1	12.5	1.9
7. Collaborate with other professionals (e.g. psychologists, physicians) in remediating communication disorders.	361	30.7	82.8	13.0	13.0	10.5
8. Use contemporary technology for remediation (e.g. computer-assisted instruction, telecommunications, prosthetic devices other than hearing aids).	359	7.2	14.2	12.8	9.2	73.5
9. Develop prognostic statements based on assessment data.	358	55.3	65.9	21.2	12.8	12.0
10. Use ongoing assessment data in making the decision to terminate remediation services.	360	49.4	86.4	15.8	13.6	3.6
11. Deliver services in rural settings	357	20.7	48.7	1.7	5.0	40.1

le 7 (cont.)

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
12. Deliver services in private practice settings.	356	22.5	10.4	4.2	5.3	71.1
13. Interpret laws affecting the communicatively handicapped (e.g. due process, individualized education programs, confidentiality).	361	22.4	66.5	37.4	31.6	14.4
14. Manage the finances of professional practice (e.g. cost accounting, third-party payments, budget management).	356	2.8	4.2	2.0	2.2	94.1
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. Provide amplication services to hearing-impaired persons.	361	37.1	16.6	10.8	10.0	55.1
16. Evaluate children with language disorders.	361	69.5	75.9	47.1	30.2	3.6
17. Evaluate persons with articulation disorders.	361	94.7	68.4	25.8	19.7	.8
18. Assess auditory function to determine site of lesion.	358	25.7	6.7	8.7	6.1	72.6
19. Evaluate persons with fluency disorders.	360	73.6	56.1	33.3	28.6	12.2
20. Evaluate persons with phonation/resonation disorders.	361	67.0	44.6	25.8	21.1	22.7
21. Evaluate persons with motor speech (neurological) disorders.	361	49.9	36.6	24.9	21.6	35.2
22. Treat persons with communication problems related to hearing impairment.	359	66.3	51.0	24.5	22.3	16.7
23. Treat children with language disorders.	361	67.3	80.1	44.9	34.1	3.3

Table 7 (cont.)

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
24. Treat persons with articulation disorders.	360	90.8	74.7	26.9	24.7	.8
25. Work with hearing-impaired infants.	359	19.2	8.9	7.2	8.6	74.1
26. Treat persons with fluency disorders.	359	66.0	60.7	29.2	28.7	16.2
27. Treat persons with phonation/resonation disorders.	356	56.7	46.1	23.0	23.3	29.2
28. Treat persons with motor speech (neurological) disorders.	360	44.2	40.8	23.1	24.7	35.8
SKILLS IN WORKING WITH SPECIAL POPULATIONS						
29. Work with clients' families.	360	31.4	86.7	14.4	18.3	7.2
30. Work with preschool children.	359	49.0	63.5	18.1	20.3	14.2
31. Work with adolescents.	361	51.0	75.1	13.6	14.4	11.4
32. Work with the aged.	358	28.8	9.2	5.6	4.2	69.3
33. Evaluate persons who are nonspeaking.	360	34.4	40.0	18.6	17.5	43.3
34. Evaluate persons with multiple handicaps.	357	48.2	57.1	21.8	22.1	23.0
35. Work with children with severe language impairments.	360	58.1	74.7	36.7	31.9	5.6
36. Work with the bilingual/bicultural population.	358	11.5	41.9	8.4	12.3	56.4
37. Treat persons who are nonspeaking.	359	31.2	41.2	18.9	20.3	42.3
38. Treat persons with multiple handicaps.	360	44.2	62.5	22.8	25.3	23.3

Table 9. Proportion of Certified Speech[illegible]nguage Pathologists' Perceptions of Sources of Training in Acquiring Each Skill

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
GENERAL SKILLS						
1. Identify persons at high risk for communication disorders.	1115	70.2%	62.4%	31.0%	20.9%	10.4%
2. Evaluate the quality of screening tools for identification.	1124	53.0	72.5	22.8	19.4	7.9
3. Evaluate the quality of assessment tools.	1124	57.5	73.4	27.8	21.8	6.7
4. Communicate diagnostic findings to other professionals (e.g. psychologists, physicians).	1126	43.3	92.6	11.1	10.4	.3
5. Establish individual treatment plans based on assessment data.	1126	63.8	87.4	31.0	22.6	.2
6. Select individuals with communication disorders for inclusion in a caseload.	1124	62.7	87.2	19.1	10.6	.2
7. Collaborate with other professionals (e.g. psychologists, physicians) in remediating communication disorders.	1124	31.5	93.4	16.5	9.1	2.4
8. Use contemporary technology for remediation (e.g. computer-assisted instruction, telecommunications, prosthetic devices other than hearing aids).	1120	11.8	24.5	21.3	15.1	58.5
9. Develop prognostic statements based on assessment data.	1124	60.7	77.1	21.9	17.4	5.9
10. Use ongoing assessment data in making the decision to terminate remediation services.	1124	49.2	88.7	16.7	16.7	1.5
11. Deliver services in rural settings	1103	16.5	37.5	1.4	4.3	51.5

Table 9 (cont.)

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
12. Deliver services in private practice settings.	1107	14.9	36.0	10.6	14.0	49.7
13. Interpret laws affecting the communicatively handicapped (e.g. due process, individualized education programs, confidentiality).	1122	16.4	64.7	30.2	30.7	17.6
14. Manage the finances of professional practice (e.g. cost accounting, third-party payments, budget management).	1116	2.0	20.9	5.4	12.1	72.5
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. Provide amplication services to hearing-impaired persons.	1118	39.5	19.5	7.3	5.9	56.8
16. Evaluate children with language disorders.	1124	84.5	78.1	48.4	33.4	1.7
17. Evaluate persons with articulation disorders.	1124	95.4	73.9	33.2	26.1	.0
18. Assess auditory function to determine site of lesion.	1118	32.9	7.6	8.6	6.8	66.1
19. Evaluate persons with fluency disorders.	1124	88.2	58.5	30.4	26.8	3.2
20. Evaluate persons with phonation/resonation disorders.	1120	84.8	58.9	32.5	21.3	3.0
21. Evaluate persons with motor speech (neurological) disorders.	1122	74.2	62.7	40.0	29.1	8.6
22. Treat persons with communication problems related to hearing impairment.	1122	70.9	54.6	19.9	18.2	15.9
23. Treat children with language disorders.	1126	80.6	83.5	51.0	37.5	1.9

Table 9 (cont.)

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
24. Treat persons with articulation disorders.	1124	92.2	78.2	34.4	27.5	[illegible]
25. Work with hearing-impaired infants.	1120	23.7	16.2	8.5	8.8	67.5
26. Treat persons with fluency disorders.	1124	84.1	63.6	31.7	27.3	4.0
27. Treat persons with phonation/resonation disorders.	1120	78.8	62.9	30.6	24.4	5.1
28. Treat persons with motor speech (neurological) disorders.	1122	69.1	67.7	38.9	30.6	9.3
SKILLS IN WORKING WITH SPECIAL POPULATIONS						
29. Work with clients' families.	1126	39.1	88.9	13.5	17.5	3.2
30. Work with preschool children.	1122	51.7	74.5	20.6	18.2	7.4
31. Work with adolescents.	1122	48.3	72.5	14.5	13.7	13.2
32. Work with the aged.	1118	57.6	43.4	15.9	13.6	27.0
33. Evaluate persons who are nonspeaking.	1122	36.7	59.6	26.0	26.0	24.5
34. Evaluate persons with multiple handicaps.	1120	49.1	70.9	28.9	25.7	14.4
35. Work with children with severe language impairments.	1124	62.9	79.9	38.5	30.4	5.6
36. Work with the bilingual/bicultural population.	1120	12.9	50.9	11.2	14.9	46.4
37. Treat persons who are nonspeaking.	1116	34.0	61.8	26.0	26.3	25.6
38. Treat persons with multiple handicaps.	1118	45.8	71.7	31.0	27.3	15.0

Table 10. Proportion of Certified Audiologists' Perceptions of Sources of Training in Acquiring Each Skill

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
GENERAL SKILLS						
1. Identify persons at high risk for communication disorders.	163	79.2%	59.5%	18.5%	12.3%	4.8%
2. Evaluate the quality of screening tools for identification.	164	47.3	52.2	14.6	12.8	17.6
3. Evaluate the quality of assessment tools.	164	48.0	57.3	18.8	14.1	15.5
4. Communicate diagnostic findings to other professionals (e.g. psychologists, physicians).	164	50.3	87.9	6.5	9.1	.2
5. Establish individual treatment plans based on assessment data.	163	61.6	60.8	15.3	10.8	12.5
6. Select individuals with communication disorders for inclusion in a caseload.	160	48.7	43.3	6.5	5.4	27.9
7. Collaborate with other professionals (e.g. psychologists, physicians) in remediating communication disorders.	163	31.3	91.2	8.3	9.2	3.7
8. Use contemporary technology for remediation (e.g. computer-assisted instruction, telecommunications, prosthetic devices other than hearing aids).	164	12.3	22.8	17.6	16.0	52.9
9. Develop prognostic statements based on assessment data.	164	60.7	69.5	13.7	10.9	9.6
10. Use ongoing assessment data in making the decision to terminate remediation services.	161	38.4	54.1	8.6	7.2	24.7
11. Deliver services in rural settings	162	14.9	38.2	2.0	6.4	49.7

Table 10 (cont.)

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
12. Deliver services in private practice settings.	162	15.8	46.6	11.3	11.9	40.4
13. Interpret laws affecting the communicatively handicapped (e.g. due process, individualized education programs, confidentiality).	163	15.1	41.5	21.5	25.0	30.5
14. Manage the finances of professional practice (e.g. cost accounting, third-party payments, budget management).	164	2.6	44.6	8.9	17.7	50.2
SKILLS IN WORKING WITH VARIOUS DISORDERS						
15. Provide amplication services to hearing-impaired persons.	165	78.2	81.7	35.6	24.8	1.4
16. Evaluate children with language disorders.	163	58.2	21.8	9.0	7.6	37.5
17. Evaluate persons with articulation disorders.	161	61.9	13.5	4.5	4.1	38.0
18. Assess auditory function to determine site of lesion.	165	91.8	63.8	40.0	25.9	2.1
19. Evaluate persons with fluency disorders.	162	42.9	5.5	1.8	3.7	61.0
20. Evaluate persons with phonation/resonation disorders.	161	39.0	5.9	1.6	3.0	64.3
21. Evaluate persons with motor speech (neurological) disorders.	162	38.6	10.5	4.3	5.5	61.2
22. Treat persons with communication problems related to hearing impairment.	163	85.2	69.3	30.5	21.2	3.5
23. Treat children with language disorders.	162	47.2	14.7	5.9	6.9	51.0

Table 10 (cont.)

SKILL	N	Academic or Practicum	Job Experience	Cont. Education	Other Learning	Not much Training
24. Treat persons with articulation disorders.	161	53.1	10.0	3.4	4.6	49.2
25. Work with hearing-impaired infants.	164	63.0	70.7	22.1	21.9	9.1
26. Treat persons with fluency disorders.	161	34.9	4.5	1.4	3.2	67.1
27. Treat persons with phonation/resonation disorders.	161	33.4	4.8	1.3	2.7	70.0
28. Treat persons with motor speech (neurological) disorders.	161	31.4	7.5	3.2	3.9	70.6
SKILLS IN WORKING WITH SPECIAL POPULATIONS						
29. Work with clients' families.	165	43.7	90.2	12.6	15.9	3.5
30. Work with preschool children.	165	68.0	80.6	13.5	15.0	3.1
31. Work with adolescents.	165	55.9	79.7	7.9	11.2	5.8
32. Work with the aged.	164	58.7	80.9	14.5	16.5	5.1
33. Evaluate persons who are nonspeaking.	163	38.4	64.8	9.7	12.5	20.1
34. Evaluate persons with multiple handicaps.	164	45.5	72.0	11.9	14.2	15.1
35. Work with children with severe language impairments.	162	39.4	41.7	8.5	9.2	40.3
36. Work with the bilingual/bicultural population.	162	12.9	50.9	2.8	8.7	45.4
37. Treat persons who are nonspeaking.	162	25.8	48.4	8.0	8.9	42.0
38. Treat persons with multiple handicaps.	164	33.0	56.9	10.0	10.5	33.2

TABLE 13 A PERCENTAGE OF PRACTITIONERS' SELF-RATINGS OF HIGH COMPETENCE[1] AND MEDIAN COMPETENCE BY SETTING AND SKILL, AND RESULTS OF NONPARAMETRIC DIFFERENCE TESTS BY SKILL: SPEECH-LANGUAGE PATHOLOGISTS

	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
SKILL	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	326	49	98	52	NA	NA	NA	NA	NA	NA
GENERAL SKILLS										
1. IDENTIFY HIGH RISK										
% with high competence	62.7%	61.2%	59.8%	56.9%	NS	NS	NS	NS	NS	NS
(Median competence)	8.1	8.2	8.1	7.8						
2. EVALUATE SCREENING TOOLS										
% with high competence	49.2%	49.0%	44.9%	42.3%	NS	NS	NS	NS	NS	NS
(Median competence)	7.5	7.4	7.0	7.0						
3. EVALUATE ASSESSMENT TOOLS										
% with high competence	55.7%	53.1%	53.1%	48.1%	NS	NS	NS	NS	NS	NS
(Median competence)	7.7	7.6	7.6	7.4						
[illegible] COMMUNICATE FINDINGS TO PROFESSIONALS										
% with high competence	78.5%	87.8%	83.5%	78.8%	*	*				
(Median competence)	8.5	9.4	9.1	8.9						
5. ESTABLISH IND. TREATMENT PLANS										
% with high competence	89.8%	93.9%	90.8%	90.4%	NS	NS	NS	NS	NS	NS
(Median competence)	8.9	9.2	8.9	9.3						
6. SELECT INDS. FOR CASELOAD										
% with high competence	92.6%	95.9%	90.8%	90.4%	NS	NS	NS	NS	NS	NS
(Median competence)	9.1	9.3	9.1	9.4						
7. COLLABORATE OTHER PROFESSIONALS										
% with high competence	77.5%	89.8%	84.7%	84.6%	*	*				
(Median competence)	8.5	9.4	9.0	9.0						
8. USE CONTEMPORARY TECHNOLOGY										
% with high competence	3.4%	14.9%	13.3%	2.0%	*	*	*			*
(Median competence)	1.8	4.9	3.8	2.4						
9. DEVELOP PROGNOSTIC STATEMENTS										
% with high competence	[illegible]1%	73.5%	61.2%	59.6%	*	†				
(Median competence)	[illegible]	8.4	7.9	7.8						

TABLE 13 A (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	326	49	98	52	NA	NA	NA	NA	NA	NA
10. USE ONGOING ASSESSMENT DATA										
% with high competence	80.2%	77.6%	75.5%	84.6%	NS	NS	NS	NS	NS	NS
(Median competence)	8.5	8.8	8.6	8.6						
11. DELIVER SERVICES RURAL S[illegible]GS										
% with high competence	38.4%	40.4%	34.7%	44.0%	NS	NS	NS	NS	NS	NS
(Median competence)	5.6	5.3	5.1	7.0						
12. DELIVER SERVICES PRIVATE PRACTICE										
% with high competence	28.2%	41.7%	35.7%	92.3%			*		*	*
(Median competence)	5.3	5.2	6.0	9.6						
13. INTERPRET LAWS										
% with high competence	47.3%	28.6%	26.5%	42.3%	*	*				
(Median competence)	7.3	5.3	5.1	6.8						
14. MANAGE FINANCES										
% with high competence	3.5%	12.2%	17.3%	48.1%	*	*	*	*		*
(Median competence)	1.7	3.1	3.9	7.0						
SKILLS IN WORKING WITH VARIOUS DISORDER										
15. PROVIDE AMPLIFICATION SERVICES										
% with high competence	5.0%	20.8%	6.19%	5.9%	NS	NS	NS	NS	NS	NS
(Median competence)	1.8	1.3	1.6	1.7						
16. EVALUATE CHILDREN LANGUAGE DIS.										
% with high competence	87.1%	63.3%	67.3%	73.1%	NS	NS	NS	NS	NS	NS
(Median competence)	8.9	8.9	8.4	8.8						
17. EVALUATE PERSONS ARTIC. DIS.										
% with high competence	95.4%	87.8%	85.7%	96.2%	NS	NS	NS	NS	NS	NS
(Median competence)	9.5	9.5	9.3	9.5						
18. EVALUATE AUD. FUNCTION DET. SITE LESION										
% with high competence	5.05%	4.2%	6.3%	11.8%	*			*	*	
(Median competence)	1.5	1.1	1.4	1.6						
19. EVALUATE PERSONS FLUENCY DIS.										
% with high competence	47.4%	49.0%	49.0%	48.1%	NS	NS	NS	NS	NS	NS
(Median competence)	7.4	7.4	7.4	7.4						

TABLE 13 A (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	2 & 4
NUMBER OF CASES	326	49	98	52	NA	NA	NA	NA	NA	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.										
% with high competence	31.7%	52.1%	53.1%	38.5%	*	*				
(Median competence)	6.7	7.6	7.6	6.9						
21. EVALUATE PERSONS MOTOR SPEECH DIS										
% with high competence	30.6%	75.5%	71.4%	61.5%	*	*	*		†	
(Median competence)	6.6	8.8	8.4	7.9						
22. TREAT COMM. PROBLEMS RELATED TO HEARING										
% with high competence	36.7%	22.9%	27.6%	28.8%	†	†				
(Median competence)	6.8	5.5	6.3	5.8						
23. TREAT CHILDREN LANGUAGE DIS.										
% with high competence	89.5%	69.4%	69.4%	76.9%	*		†			
(Median competence)	9.0	9.0	8.4	8.9						
24. TREAT PERSONS ARTIC DIS.										
% with high competence	96.0%	95.9%	85.7%	88.5%	NS	NS	NS	NS	NS	NS
(Median competence)	9.4	9.5	9.0	9.4						
25. WORK WITH HEARING-IMPAIRED INFANT										
% with high competence	9.5%	10.4%	13.4%	8.0%	NS	NS	NS	NS	NS	NS
(Median competence)	2.2	2.3	2.7	2.1						
26. TREAT PERSONS FLUENCY DISORDERS										
% with high competence	34.8%	45.8%	33.8%	42.3%	NS	NS	NS	NS	NS	NS
(Median competence)	6.7	6.8	6.7	7.1						
27. TREAT PERSONS PHONATION/RES. DIS.										
% with high competence	28.0%	53.6%	51.0%	40.4%	*	*				
(Median competence)	6.5	7.7	7.5	6.8						
28. TREAT PERSONS MOTOR SPEECH DIS.										
% with high competence	33.6%	70.8%	73.5%	61.5%	*	*	*			
(Median competence)	6.7	8.8	8.3	8.2						
SKILLS IN WORKING WITH SPECIAL POP.										
29. WORK WITH CLIENTS' FAMILIES.										
% with high comperence	77.2%	89.8%	87.8%	94.2%	*	*	*			
(Median competence)	8.6	9.5	9.1	9.4						

TABLE 13 A (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVER-SITY (2)	NON-UNI-VERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	326	49	98	52	NA	NA	NA	NA	NA	NA
30. WORK WITH PRESCHOOL CHILDREN										
% with high competence	74.1%	73.5%	71.4%	76.9%	NS	NS	NS	NS	NS	NS
(Median competence)	8.7	9.1	8.5	9.1						
31. WORK WITH ADOLESCENTS										
% with high competence	61.8%	67.3%	53.1%	78.8%		†	†			*
(Median competence)	8.0	8.1	7.6	8.6						
32. WORK WITH AGED										
% with high competence	30.6%	70.8%	72.4%	69.2%	*	*	*			
(Median competence)	5.9	8.7	8.8	8.5						
33. EVALUATE NONSPEAKING										
% with high competence	26.6%	60.4%	53.1%	38.5%	*	*			†	
(Median competence)	5.5	7.9	7.6	6.5						
34. EVALUATE PERSONS MULTIPLE HANDICAPS										
% with high comptence	38.4%	56.3%	52.0%	37.3%	*	*			†	†
(Median competence)	6.7	7.8	7.6	6.3						
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.										
% with high competence	71.1%	71.4%	62.2%	64.7%	NS	NS	NS	NS	NS	NS
(Median competence)	8.4	8.8	8.0	8.0						
36. WORK WITH BILINGUAL/BICULTURAL										
% with high competence	28.0%	12.5%	14.3%	11.5%	*	*	†			
(Median competence)	5.5	3.0	3.4	4.9						
37. TREAT NONSPEAKING PERSONS										
% with high competence	27.5%	62.5%	48.0%	36.5%	*	*				†
(Median competence)	5.7	7.9	7.3	6.0						
38. TREAT MULTIPLE HANDICAPS										
% with high competence	39.0%	58.3%	49.0%	36.5%	*					†
(Median competence)	6.8	7.8	7.4	6.4						

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[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 self-rated competency scale.

[2] NS: Results not significant at $\alpha = .05$ with Kruskal -Wallis One Way Analysis of Variance.
*: Significantly different pair at $\alpha = .01$ with Mann-Whitney U Test.
†: Significantly different pair at $\alpha = .05$ with Mann-Whitney U Test.

LE 13 B PERCENTAGE OF PRACTITIONERS SELF-RATINGS OF HIGH COMPETENCE[1] AND MEDIAN COMPETENCE BY SETTING AND SKILL, AND RESULTS OF NONPARAMETRIC DIFFERENCE TESTS BY SKILL: AUDIOLOGISTS

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVER-SITY (2)	NON-UNI-VERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	65	108	206	122	NA	NA	NA	NA	NA	NA
GENERAL SKILLS										
1. IDENTIFY HIGH RISK										
% with high competence	65.1%	67.3%	66.7%	65.6%	NS	NS	NS	NS	NS	NS
(Median competence)	8.2	8.2	8.3	8.4						
2. EVALUATE SCREENING TOOLS										
% with high competence	43.1%	42.6%	31.4%	38.0%		†		*		
(Median competence)	6.9	7.1	5.8	6.5						
3. EVALUATE ASSESSMENT TOOLS										
% with high competence	35.9%	53.8%	40.4%	50.0%				*		
(Median competence)	6.7	7.7	6.7	7.5						
. COMMUNICATE FINDINGS TO PROFESSIONALS										
% with high competence	90.8%	86.9%	88.8%	96.7%	NS	NS	NS	NS	NS	NS
(Median competence)	9.1	9.6	9.3	9.6						
5. ESTABLISH IND. TREATMENT PLANS										
% with high competence	62.5%	46.7%	50.2%	67.5%					*	*
(Median competence)	7.9	7.3	7.5	8.2						
6. SELECT INDS. FOR CASELOAD										
% with high competence	67.2%	38.2%	40.1%	47.0%	*	*				
(Median competence)	8.0	6.6	6.5	7.3						
7. COLLABORATE OTHER PROFESSIONALS										*
% with high competence	81.5%	82.2%	74.4%	86.8%						
(Median competence)	8.8	8.9	8.7	9.2						
8. USE CONTEMPORARY TECHNOLOGY										
% with high competence	15.6%	16.3%	14.8%	19.7%	NS	NS	NS	NS	NS	NS
(Median competence)	3.7	3.9	3.1	3.6						
9. DEVELOP PROGNOSTIC STATEMENTS										
% with high competence	46.2%	65.1%	60.6%	60.0%	*	†	*			
(Median competence)	7.3	8.1	7.9	7.9						

TABLE 13 B (continued)

SKILL	SETTING	Health Facilities			RESULTS OF DIFFERENCE TESTS[2]					
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	1 & 3	1 & 4	1 & 4
NUMBER OF CASES	65	108	206	122	NA	NA	NA	NA	NA	NA
10. USE ONGOING ASSESSMENT DATA										
% with high competence	46.9%	48.6%	43.2%	48.3%	NS	NS	NS	NS	NS	NS
(Median competence)	7.4	7.4	7.0	7.4						
11. DELIVER SERVICES RURAL SETTINGS										
% with high competence	62.9%	36.3%	36.2%	48.7%	*	*				
(Median competence)	8.2	5.8	5.8	7.0						
12. DELIVER SERVICES PRIVATE PRACTICE										
% with high competence	40.3%	41.2%	47.0%	98.3%			*	†	*	*
(Median competence)	5.5	6.7	7.2	9.8						
13. INTERPRET LAWS										
% with high competence	45.3%	21.0%	25.0%	36.1%	*	*			†	*
(Median competence)	7.2	5.4	5.1	6.6						
14. MANAGE FINANCES										
% with high competence	9.7%	16.3%	19.1%	59.8%			*		*	*
(Median competence)	3.1	3.8	4.0	8.2						
SKILLS IN WORKING WITH VARIOUS DISORDER										
15. PROVIDE AMPLIFICATION SERVICES										
% with high competence	81.5%	93.5%	88.3%	95.1%	*	*	*			*
(Median competence)	8.8	9.6	9.4	9.7						
16. EVALUATE CHILDREN LANGUAGE DIS.										
% with high competence	15.9%	18.4%	12.9%	8.5%	†	*	*			
(Median competence)	5.7	3.2	3.0	3.1						
17. EVALUATE PERSONS ARTIC. DIS.										
% with high competence	27.4%	14.4%	12.0%	8.4%	*	*	*			
(Median competence)	5.1	3.5	3.2	3.3						
18. EVALUATE AUD. FUNCTION DET. SITE LESION										
% with high competence	55.4%	89.8%	91.7%	92.6%	*	*	*			
(Median competence)	7.8	9.5	9.5	9.5						
19. EVALUATE PERSONS FLUENCY DIS.										
% with high competence	7.9 %	3.9%	6.03%	5.8%	NS	NS	NS	NS	NS	NS
(Median competence)	2.4	1.6	1.9	2.1						

TABLE 13 B (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE					
		Health Facilities								
	SCHOOLS (1)	UNIVER-SITY (2)	NON-UNI-VERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	65	108	206	122	NA	NA	NA	NA	NA	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.										
% with high competence	9.5%	2.0%	2.5%	2.5%	NS	NS	NS	NS	NS	NS
(Median competence)	2.3	1.4	1.4	1.5						
21. EVALUATE PERSONS MOTOR SPEECH DIS										
% with high competence	4.8%	5.8%	8.1%	5.9%	NS	NS	NS	NS	NS	NS
(Median competence)	1.8	1.5	1.8	1.7						
22. TREAT COMM. PROBLEMS RELATED TO HEARING										
% with high competence	89.1%	72.9%	73.7%	81.1%	NS	NS	NS	NS	NS	NS
(Median competence)	8.8	8.5	8.7	8.9						
23. TREAT CHILDREN LANGUAGE DIS.										
% with high competence	28.6%	4.8%	6.5%	7.6%	*	*	*			
(Median competence)	6.4	2.4	2.1	2.3						
24. TREAT PERSONS ARTIC DIS.										
% with high competence	32.8%	5.8%	10.5%	9.2%	*	*	*			
(Median competence)	5.3	2.9	2.5	2.6						
25. WORK WITH HEARING-IMPAIRED INFANT										
% with high competence	72.3%	57.4%	54.6%	54.1%	NS	NS	NS	NS	NS	NS
(Median competence)	8.4	7.8	7.7	7.7						
26. TREAT PERSONS FLUENCY DISORDERS										
% with high competence	11.1%	1.0%	3.6%	6.7%	*	*	†			
(Median competence)	2.3	1.4	1.4	1.5						
27. TREAT PERSONS PHONATION/RES. DIS.										
% with high competence	9.7%	2.0%	2.0%	2.5%	*	*	†			
(Median competence)	2.2	1.4	1.3	1.4						
28. TREAT PERSONS MOTOR SPEECH DIS.										
% with high competence	6.5%	1.0%	2.6%	5.0%	NS	NS	NS	NS	NS	NS
(Median competence)	1.8	1.4	1.3	1.5						
SKILLS IN WORKING WITH SPECIAL POP.										
29. WORK WITH CLIENTS' FAMILIES.										
% with high competence	84.6%	82.4%	82.0%	82.8%	NS	NS	NS	NS	NS	NS
(Median competence)										

TABLE 13 B (continued)

SKILL	SETTING				RESULTS OF DIFFERENCE TESTS[2]					
		Health Facilities								
	SCHOOLS (1)	UNIVERSITY (2)	NON-UNIVERSITY (3)	PRIVATE PRACTICE (4)	1 & 2	1 & 3	1 & 4	2 & 3	2 & 4	3 & 4
NUMBER OF CASES	65	108	206	122	NA	NA	NA	NA	NA	NA
30. WORK WITH PRESCHOOL CHILDREN										
% with high competence	78.5%	78.7%	76.1%	75.4%	NS	NS	NS	NS	NS	NS
(Median competence)	8.9	8.9	8.8	8.5						
31. WORK WITH ADOLESCENTS										
% with high competence	83.1%	79.6%	76.1%	76.2%	NS	NS	NS	NS	NS	NS
(Median competence)	8.6	8.9	8.7	8.8						
32. WORK WITH AGED										
% with high competence	50.8%	87.0%	89.7%	95.1%	*	*	*			†
(Median competence)	7.5	9.5	9.4	9.6						
33. EVALUATE NONSPEAKING										
% with high competence	42.2%	41.1%	46.0%	39.7%	NS	NS	NS	NS	NS	NS
(Median competence)	7.0	7.0	7.3	6.6						
34. EVALUATE PERSONS MULTIPLE HANDICAPS										
% with high competence	47.7%	50.9%	42.6%	33.1%	NS	NS	NS	NS	NS	NS
(Median competence)	7.3	7.5	7.2	6.6						
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.										
% with high competence	45.3%	21.5%	16.3%	23.3%	*	*	*	†		
(Median competence)	7.0	5.3	4.5	4.3						
36. WORK WITH BILINGUAL/BICULTURAL										
% with high competence	14.8%	34.0%	19.4%	25.2%	NS	NS	NS	NS	NS	NS
(Median competence)	4.3	5.5	5.2	4.7						
37. TREAT NONSPEAKING PERSONS										
% with high competence	25.8%	20.4%	20.0%	23.5%	NS	NS	NS	NS	NS	NS
(Median competence)	4.8	5.2	5.1	4.8						
38. TREAT MULTIPLE HANDICAPS										
% with high competence	24.2%	29.1%	25.0%	22.5%	NS	NS	NS	NS	NS	NS
(Median competence)	5.4	5.3	5.5	5.0						

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[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 self-rated competency scale.

[2] NS: Results not significant at α= .05 with Kruskal-Wallis One Way Analysis of Variance.
*: Significantly different pair at α= .01 with Mann-Whitney U Test.
†: Significantly different pair at α= .05 with Mann-Whitney U Test.

TABLE 14 A PERCENTAGE OF PRACTITIONERS SELF-RATINGS OF HIGH COMPETENCE[1] AND MEDIAN COMPETENCE BY NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE AND SKILL, AND CORRELATION BETWEEN EXPERIENCE AND COMPETENCE BY SKILL: SPEECH - LANGUAGE PATHOLOGISTS

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	76	162	181	178	NA
GENERAL SKILLS					
1. IDENTIFY HIGH RISK					
% with high competence	55.3%	57.2%	68.5%	62.2%	NS
(Median competence)	7.8	7.9	8.3	8.1	
2. EVALUATE SCREENING TOOLS					
% with high competence	44.7%	46.6%	51.1%	48.0%	NS
(Median competence)	6.9	7.3	7.5	7.4	
3. EVALUATE ASSESSMENT TOOLS					
% with high competence	48.7%	57.1%	60.0%	51.4%	NS
(Median competence)	7.4	7.7	7.8	7.6	
4. COMMUNICATE FINDINGS TO PROFESSIONALS					
% with high competence	81.6%	79.5%	81.7%	81.9%	NS
(Median competence)	8.7	8.7	8.8	8.9	
5. ESTABLISH IND. TREATMENT PLANS					
% with high competence	85.5%	90.7%	88.3%	91.6%	.0705
(Median competence)	8.7	9.0	9.0	9.1	
6. SELECT INDS. FOR CASELOAD					
% with high competence	86.8%	91.9%	90.6%	94.9%	.0808
(Median competence)	8.9	9.1	9.1	9.3	
7. COLLABORATE OTHER PROFESSIONALS					
% with high competence	76.3%	78.9%	81.7%	83.1%	.1212
(Median competence)	8.5	8.5	8.8	9.2	
8. USE CONTEMPORARY TECHNOLOGY					
% with high competence	4.0%	8.3%	7.2%	8.7%	NS
(Median competence)	2.7	2.3	2.2	2.7	
9. DEVELOP PROGNOSTIC STATEMENTS					
% with high competence	43.4%	50.9%	51.1%	62.4%	.1017
(Median competence)	7.1	7.5	7.5	8.	

TABLE 14 A (Continued)

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	76	162	181	178	NA
10. USE ONGOING ASSESSMENT DATA					
% with high competence	69.7%	80.1%	77.8%	83.0%	.0936
(Median competence)	8.2	8.4	8.4	8.8	
11. DELIVER SERVICES RURAL SETTINGS					
% with high competence	37.3%	39.2%	43.5%	35.9%	.212
(Median competence)	5.6	5.6	6.7	5.1	
12. DELIVER SERVICES PRIVATE PRACTICE					
% with high competence	25.3%	31.6%	38.0%	48.3%	NS
(Median competence)	5.1	5.3	6.4	7.3	
13. INTERPRET LAWS					
% with high competence	39.5%	44.7%	40.6%	41.6%	NS
(Median competence)	6.6	6.9	6.5	6.6	
14. MANAGE FINANCES					
% with high competence	9.5%	8.9%	12.3%	14.4%	.1193
(Median competence)	1.5	2.2	2.3	3.4	
SKILLS IN WORKING WITH VARIOUS DISORDERS					
15. PROVIDE AMPLIFICATION SERVICES					
% with high competence	2.7%	7.6%	4.4%	6.9%	NS
(Median competence)	2.0	1.8	1.6	1.8	
16. EVALUATE CHILDREN LANGUAGE DIS.					
% with high competence	75.0%	83.2%	81.7%	77.0%	NS
(Median competence)	8.7	8.8	9.0	8.8	
17. EVALUATE PERSONS ARTIC. DIS.					
% with high competence	90.8%	92.5%	93.9%	91.6%	.0617
(Median competence)	9.1	9.4	9.5	9.5	
18. EVALUATE AUD. FUNCTION DET. SITE LESION					
% with high competence	10.5%	5.8%	5.6%	4.7%	-0.0694
(Median competence)	2.0	1.4	1.4	1.3	
19. EVALUATE PERSONS FLUENCY DIS.					
% with high competence	50.0%	51.6%	39.4%	52.2%	NS
(Median competence)	7.5	7.6	7.0	17.6	

TABLE 14 A (continued)

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	76	162	181	178	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.					
% with high competence	39.5%	43.1%	31.1%	41.6%	NS
(Median competence)	7.1	7.1	6.7	6.9	
21. EVALUATE PERSONS MOTOR SPEECH DIS.					
% with high competence	46.1%	42.2%	42.2%	51.4%	NS
(Median competence	7.3	7.0	7.1	7.6	
22. TREAT COMM. PROBLEMS RELATED TO HEARING					
% with high competence	32.9%	36.0%	29.4%	39.8%	NS
(Median competence)	6.4	6.8	6.3	6.8	
23. TREAT CHILDREN LANGUAGE DIS.					
% with high competence	77.6%	81.4%	87.2%	83.1%	NS
(Median competence)	8.6	8.7	9.1	8.9	
24. TREAT PERSONS ARTIC DIS.					
% with high competence	90.8%	93.2%	94.4%	92.1%	.0770
(Median competence)	9.0	9.2	9.4	9.4	
25. WORK WITH HEARING-IMPAIRED INFANTS					
% with high competence	10.5%	11.0%	10.6%	12.3%	NS
(Median competence)	2.2	2.5	2.4	2.1	
26. TREAT PERSONS FLUENCY DISORDERS					
% with high competence	36.8%	37.9%	34.4%	38.4%	NS
(Median competence)	6.7	6.8	6.5	6.8	
27. TREAT PERSONS PHONATION/RES. DIS.					
% with high competence	34.2%	37.3%	31.7%	39.0%	NS
(Median competence)	6.9	6.8	6.6	6.8	
28. TREAT PERSONS MOTOR SPEECH DIS.					
% with high competence	48.7%	42.9%	45.0%	52.8%	.0570
(Median competence)	7.4	7.1	7.2	7.6	
SKILLS IN WORKING WITH SPECIAL POP.					
29. WORK WITH CLIENTS' FAMILIES.					
% with high competence	74.7%	76.4%	85.5%	85.4%	.1240
(Median competence)	8.6	8.5	9.0	9.0	

TABLE 14 A (continued)

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	76	162	181	178	NA
30. WORK WITH PRESCHOOL CHILDREN					
% with high competence	69.7%	76.4%	78.3%	72.9%	NS
(Median competence)	8.3	8.8	9.0	8.7	
31. WORK WITH ADOLESCENTS					
% with high competence	55.3%	62.7%	56.7%	72.5%	.0892
(Median competence)	7.8	8.0	7.7	8.6	
32. WORK WITH AGED					
% with high competence	55.3%	43.8%	46.4%	48.9%	NS
(Median competence)	7.7	7.0	7.1	7.4	
33. EVALUATE NONSPEAKING					
% with high competence	43.4%	37.3%	39.4%	34.3%	NS
(Median competence)	6.9	6.5	6.7	6.0	
34. EVALUATE PERSONS MULTIPLE HANDICAPS					
% with high competence	39.5%	41.6%	46.1%	46.0%	NS
(Median competence)	6.6	7.0	7.2	7.2	
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.					
% with high competence	59.2%	67.7%	76.1%	67.8%	NS
(Median competence)	8.0	8.1	8.4	8.4	
36. WORK WITH BILINGUAL/BICULTURAL					
% with high competence	19.7%	22.6%	21.7%	21.8%	NS
(Median competence)	4.5	5.1	5.0	4.9	
37. TREAT NONSPEAKING PERSONS					
% with high competence	46.1%	37.9%	40.0%	32.2%	-0.0568
(Median competence)	7.1	6.8	6.7	5.9	
38. TREAT MULTIPLE HANDICAPS					
% with high competence	40.8%	44.1%	48.3%	41.1%	NS
(Median competence)	6.7	7.1	7.4	6.9	

[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale.

[2] Kendall's Tau

[3] α= .05; NS = not significant.

TABLE 14 B PERCENTAGE OF PRACTITIONERS SELF-RATINGS OF HIGH COMPETENCE[1] AND MEDIAN COMPETENCE BY NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE AND SKILL, AND CORRELATION BETWEEN EXPERIENCE AND COMPETENCE BY SKILL: AUDIOLOGISTS

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	106	194	150	127	NA
GENERAL SKILLS					
1. IDENTIFY HIGH RISK					
% with high competence	64.8%	61.3%	68.9%	65.9%	.0707
(Median competence)	8.1	8.0	8.6	8.5	
2. EVALUATE SCREENING TOOLS					
% with high competence	32.1%	30.5%	44.3%	31.7%	NS
(Median competence)	6.4	5.9	7.0	6.1	
3. EVALUATE ASSESSMENT TOOLS					
% with high competence	36.2%	38.9%	48.6%	45.7%	.0805
(Median competence)	6.7	6.5	7.4	7.0	
4. COMMUNICATE FINDINGS TO PROFESSIONALS					
% with high competence	83.0%	91.1%	94.0%	93.7%	.1324
(Median competence)	9.1	9.2	9.5	9.6	
5. ESTABLISH IND. TREATMENT PLANS					
% with high competence	47.6%	52.4%	52.4%	63.8%	.1026
(Median competence)	7.4	7.6	7.7	8.1	
6. SELECT INDS. FOR CASELOAD					
% with high competence	36.1%	42.0%	43.4%	56.5%	.0819
(Median competence)	6.5	6.5	6.8	7.8	
7. COLLABORATE OTHER PROFESSIONALS					
% with high competence	70.8%	81.2%	78.4%	84.1%	.0857
(Median competence)	8.5	8.8	8.9	9.1	
8. USE CONTEMPORARY TECHNOLOGY					
% with high competence	15.8%	13.8%	19.7%	16.8%	NS
(Median competence)	3.1	3.2	3.3	3.5	
9. DEVELOP PROGNOSTIC STATEMENTS					
% with high competence	50.9%	56.1%	59.2%	63.0%	.0897
(Median competence)	7.5	7.7	7.9	7.9	

TABLE 14 B (continued)

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	106	194	150	127	NA
10. USE ONGOING ASSESSMENT DATA					
% with high competence	48.5%	42.7%	47.9%	42.7%	NS
(Median competence)	7.3	7.0	7.4	7.1	
11. DELIVER SERVICES RURAL SETTINGS					
% with high competence	43.6%	41.2%	42.9%	36.9%	-0.0630
(Median competence)	7.0	6.3	6.7	5.0	
12. DELIVER SERVICES PRIVATE PRACTICE					
% with high competence	55.0%	55.6%	59.2%	61.1%	.0508
(Median competence)	8.0	7.9	8.1	8.6	
13. INTERPRET LAWS					
% with high competence	28.2%	27.4%	27.5%	36.2%	NS
(Median competence)	5.5	5.8	5.4	6.3	
14. MANAGE FINANCES					
% with high competence	16.3%	25.8%	28.8%	34.9%	.0797
(Median competence)	3.3	4.9	5.0	5.4	
SKILLS IN WORKING WITH VARIOUS DISORDERS					
15. PROVIDE AMPLIFICATION SERVICES					
% with high competence	84.9%	89 5%	90.0%	88.1%	.1117
(Median competence)	9.1	9.2	9.6	9.6	
16. EVALUATE CHILDREN LANGUAGE DIS.					
% with high competence	8.9%	8.1%	17.4%	15.9%	.0662
(Median competence)	3.0	3.1	3.1	4.0	
17. EVALUATE PERSONS ARTIC. DIS.					
% with high competence	11.9%	10.7%	11.8%	21.0%	NS
(Median competence)	4.0	3.3	2.9	4.7	
18. EVALUATE AUD. FUNCTION DET. SITE LESION					
% with high competence	87.6%	87.0%	85.3%	86.6%	NS
(Median competence)	9.3	9.1	9.6	9.4	
19. EVALUATE PERSONS FLUENCY DIS.					
% with high competence	6.1%	3.8%	4.2%	9.5%	.0813
(Median competence)	2.0	1.9	1.8	2.6	

TABLE 14 B (continued)

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION[2] COEFFICIENT (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	106	194	150	127	NA
20. EVALUATE PERSONS PHONATION/RESON. DIS.					
% with high competence	3.0%	2.2%	1.4%	7.3%	.0838
(Median competence)	1.4	1.4	1.4	1.9	
21. EVALUATE PERSONS MOTOR SPEECH DIS.					
% with high competence	7.9%	5.4%	4.9%	8.2%	.0564
(Median competence)	1.9	1.5	1.5	2.2	
22. TREAT COMM. PROBLEMS RELATED TO HEARING					
% with high competence	77.1%	79.1%	75.3%	76.4%	NS
(Median competence)	8.8	8.7	8.7	8.7	
23. TREAT CHILDREN LANGUAGE DIS.					
% with high competence	7.8%	9.6%	10.6%	10.4%	NS
(Median competence)	2.3	2.4	2.2	2.9	
24. TREAT PERSONS ARTIC DIS.					
% with high competence	13.7%	8.6%	10.4%	18.5%	NS
(Median competence)	3.7	2.9	2.4	3.2	
25. WORK WITH HEARING-IMPAIRED INFANTS					
% with high competence	60.4%	55.2%	58.7%	4.0%	NS
(Median competence)	7.9	7.7	7.9	1.5	
26. TREAT PERSONS FLUENCY DISORDERS					
% with high competence	4.0%	3.24%	3.55%	8.9%	.0653
(Median competence)	1.5	1.4	1.4	1.9	
27. TREAT PERSONS PHONATION/RES. DIS.					
% with high competence	2.0%	1.6%	2.1%	7.3%	.0562
(Median competence)	1.4	1.4	1.3	1.7	
28. TREAT PERSONS MOTOR SPEECH DIS.					
% with high competence	5.1%	2.2%	3.6%	5.7%	.0762
(Median competence)	1.4	1.3	1.4	1.8	
SKILLS IN WORKING WITH SPECIAL POP.					
29. WORK WITH CLIENTS' FAMILIES.					
% with high competence	80.2%	81.8%	79.3%	84.3%	NS
(Median competence)	8.7	8.7	8.7	8.8	

TABLE 14 B (continued)

SKILL	NUMBER OF YEARS OF PROFESSIONAL EXPERIENCE				CORRELATION COEFFICIENT[2] (Where significant)[3]
	0-3 Yrs	4-6 Yrs.	7-10 Yrs	11+ Yrs.	
NUMBER OF CASES	106	194	150	127	NA
30. WORK WITH PRESCHOOL CHILDREN					
% with high competence	81.1%	76.0%	78.0%	71.7%	NS
(Median competence)	8.9	8.7	8.7	8.5	
31. WORK WITH ADOLESCENTS					
% with high competence	83.0%	77.6%	74.0%	77.2%	NS
(Median competence)	8.9	8.7	8.6	8.7	
32. WORK WITH AGED					
% with high competence	87.7%	86.5%	82.6%	85.8%	NS
(Median competence)	9.4	9.2	9.3	9.5	
33. EVALUATE NONSPEAKING					
% with high competence	39.6%	44.4%	44.6%	41.3%	NS
(Median competence)	6.9	7.2	7.1	6.8	
34. EVALUATE PERSONS MULTIPLE HANDICAPS					
% with high competence	46.2%	40.0%	42.6%	44.9%	NS
(Median competence)	7.3	7.0	7.1	7.1	
35. WORK WITH CHILDREN SEVERE LANG. IMPAIR.					
% with high competence	25.0%	20.3%	22.8%	26.8%	NS
(Median competence)	5.2	4.9	4.6	4.7	
36. WORK WITH BILINGUAL/BICULTURAL					
% with high competence	30.4%	19.4%	19.9%	26.2%	NS
(Median competence)	5.2	5.0	4.3	5.1	
37. TREAT NONSPEAKING PERSONS					
% with high competence	24.0%	22.6%	25.2%	19.2%	-.0563
(Median competence)	4.9	5.5	4.9	4.7	
38. TREAT MULTIPLE HANDICAPS					
% with high competence	26.7%	24.1%	27.4%	25.6%	NS
(Median competence)	5.3	5.3	5.4	5.2	

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[1] "High competence" is defined as an assigned score of 8 or higher on the 1 to 10 competency scale.

[2] Kendall's Tau

[3] α = .05; NS = not significant.

APPENDIX B

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PROFESSIONAL SELF-STUDY PROJECT

MASTER REPORT OF SURVEYS AND DISCREPANCIES

October 1982

INTRODUCTION

A periodic review of the functions and achievements of a profession is crucially important if that profession is to remain responsive to the needs of those it serves. The Association launched such a review process in July 1980. This review, in the form of the Professional Self-Study Project, is almost certain to have a major impact on every program offering clinical and educational services in the profession of speech-language pathology and audiology.

The period of Phase I was largely a planning phase. The Ad Hoc Committee on the National Self-Study of Undergraduate and Graduate Education developed an extensive compilation of clinical service needs and consolidated statements of service needs received from representatives of ASHA boards, councils, and committees, training program directors, state speech-language-hearing association presidents, and state educational consultants, as well as various other professional organizations outside ASHA's structure. Ten Regional Study Group meetings were planned and scheduled for the four-month period of Phase II.

During Phase II of the Professional Self-Study Project, ten Regional Study Groups identified clinical service needs of the communicatively handicapped. Although the purpose of the second phase of the project was to identify service needs, a review of the study group reports also brought to light a large number of research and training needs perceived by the study group members. The clinical service needs, as well as research and training needs, that were identified in this phase of the project were incorporated into the Master Report of Regional Meetings.

In Phase III survey data were collected from practitioners, educational program directors, supervisors of clinical services, and college/university practicum supervisors in respect to competencies currently held by speech-language pathologists and audiologists. Competency survey instruments were constructed from clinical service needs identified in Phase II of the project. In this way, the unmet clinical service needs previously identified could be compared to the competency survey data. The aim of the participants in Phase III was to apply a discrepancy model to the study of currently existing competencies in the context of perceived unmet clinical service needs.

Also during Phase III, a research survey was conducted as a means of assessing opinions about what educational and/or training experiences should be included in the preparation of 1) professionals planning careers which require that they be knowledgeable users of research, and 2) professionals planning for careers in which they would be contributors to research.

Practitioner Survey Results

In analyzing the data, the following questions were asked:

> How do the data vary by certificate of clinical competence (CCC) holders versus bachelor level practitioners?
>
> How do the data vary by major employment setting?
>
> How do the data vary by the number of years employed?
>
> How frequently do practitioners use the various skills?
>
> What is the relationship between the frequency with which practitioners use skills and their ratings of their own competence to use these skills?
>
> What is the source of training for each skill?

The major findings from the practitioners' surveys are as follows[1]:

Certification

In 29 of 38 skills, bachelor level practitioners rate themselves significantly lower than certified speech-language pathologists (CCC-SP).

Few certified and uncertified practitioners feel highly competent in using contemporary technology, managing finances, and working with the bilingual/bicultural population.

Bachelor level practitioners in large proportion serve children aged 6-11 and rarely over 21 in contrast to CCC-SP's who provide 80 percent of their services to persons 0-21 years of age.

Certified audiologists (CCC-A) serve 50 percent children and 50 percent adults.

Employment Setting

Regardless of work setting, CCC-SP's rate themselves as having high competence in establishing individual treatment plans, selecting individuals for inclusion into a caseload, and evaluating and treating persons with articulation disorders. CCC-SP's in the schools rate high competence in treating

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[1] Detailed findings are omitted here for the purpose of brevity. Detailed findings are described in the Competency Survey Report to which the raw data are appended in the form of tables.

Frequency and Competency

Both bachelor level practitioners and CCC-SP's who frequently evaluate and treat persons with articulation disorders, work with preschool children and the aged feel competent in these skills. However bachelor level practitioners do not rate themselves higher than CCC-SP's on any skill.

Both certified speech-language pathologists and audiologists who frequently identify high risk persons, communicate and collaborate with other professionals, deliver services in rural or private practice settings, and work with clients' families, preschool children, and the aged report high self-perceived competence in these skills.

Source of Training

CCC-SP's rate job experience as the first source of training for 19 of 38 skills, academic or practicum as the first source of training for 12 skills, continuing education first for none of the skills, other learning first for none of the skills, and not much training first for seven skills.

In 20 of 38 skills, CCC-A's rate job experience as the first source of training. They rate academic training as the first source of training in 8 of 38 skills.

Bachelor level practitioners, CCC-SP's and CCC-A's indicate that they have not received much training in using contemporary technology and managing the finances of professional practice.

Educational Program Directors, College/University Supervisors, and Clinical Supervisors Survey Results

In analyzing the data, the following questions were asked:

Educational Program Directors:

How do the data vary by type of degree?

How do the data vary by type of graduate program?

College/University Supervisors:

How do the data vary by type of degree?

How do the data vary by type of graduate program?

Clinical Supervisors

How do the data vary by setting?

How do the data vary by type of staff?

Clinical supervisors rate CCC-SP's employed in the schools as having lower competencies than those in university, private practice, and non-university settings.

Clinical supervisors in all work settings rate CCC-SP's as having high competence in evaluating and treating articulation disorders.

Clinical supervisors in all work settings rate CCC-A's as having high competence in communicating diagnostic findings to other professionals.

Clinical supervisors rate CCC-A's employed in the schools as having lower competencies than those in other settings.

Clinical supervisors rate competencies of CCC-A's and CCC-SP's about equally for general skills and skills working with special populations. Major discrepancies between CCC-SP's and CCC-A's, as expected, are believed to be in skills working with various disorders.

DISCREPANCIES BETWEEN PRACTITIONER COMPETENCIES AND SERVICE NEEDS

Discrepancies between the needs identified by the Regional Study Groups and the results of the practitioners' competency survey were sought in further data analyses. The service needs of speech-language pathologists and audiologists are summarized in the _Master Report of Regional Meetings_ (July, 1981).

The following response patterns were identified:

1. _Discrepancy_ - high self-rating of competence by practitioners (with frequent use of skill) but a high perceived unmet clinical need expressed by the Regional Study Groups.

2. _Apparent discrepancy_ - average self-rating of competence by practitioners (with infrequent use of skill) but a high perceived unmet clinical need expressed by the Regional Study Groups.

3. _No discrepancy - but possible issue_ - low self-rating of competence by practitioners (with infrequent use of skill) but a higher perceived unmet clinical need expressed by the Regional Study Groups.

Because only thirty-eight competencies were surveyed, no data are available for some discrepancies. For example, little information is available from the Regional Study Groups regarding unmet needs in the area of audiologists' training and services. Little information surfaced regarding the outcomes of intervention.

4) interpreting assessment and remediation to clients, family, and professionals

5) service to the elderly (audiologists).

Service Needs Discrepancies

In the following areas, Regional Study Group participants identified service needs while supervisors considered them high competency areas:

Prevention

1) provide effective education, guidance, and counseling to parents

2) engage in multidisciplinary team efforts

3) establish a more effective high risk registry for infants and adults

4) expand prevention service to all ages

5) implement at risk programs for all ages

6) increase awareness of early signs and symptoms, and importance of timing of prevention activities.

Identification

1) develop systems for communication with parents, medical and rehabilitation personnel, and teachers

2) improve competence with age specific identification instruments

3) increase competence with instruments which identify fluency, voice, and motor-speech disorders

4) improve communication of professional information between professional peers

5) improve communication of professional information to allied professionals

6) include the family in the identification team

7) include professionals from nutrition, nursing, medicine, social work, and education in the identification team.

11) increased written planning to allow monitoring and accountability.

Evaluation of Outcome

1) involve family more in evaluation of progress

2) increase multi-disciplinary, multi-dimensional, and multi-situational aspects of evaluation of outcome

3) increase options of progress measuring tools (across ages, disorders; valid and reliable)

4) share information about outcome with family, and other professionals.

Administration

1) increase administrative support for collaboration with allied health professionals.

Regional Concerns

1) train family to assist in identification and remediation (speech-language pathology only)

2) improve skills to build cooperative programs with other disciplines

3) service programs feel caseload size should be set appropriately (speech-language pathology only)

4) Clinical supervisors regard speech-language pathologists as highly competent in serving hearing impaired clients.

These discrepancies between service and training needs identified by the Regional Study Groups, and considered high competency areas identified by supervisors form a basis for discussion at the National Conference. The areas in which no discrepancy was found or no data available to support or deny the training and service needs expressed in the Regional Study Groups are found in the Discrepancy Analysis Report: Training and Service Needs Versus Clinical Supervisors' Perceptions of Practitioners.

DISCREPANCIES BETWEEN EDUCATIONAL PROGRAM DIRECTORS' RATINGS OF GRADUATES COMPETENCE AND TRAINING/SERVICE NEEDS

Discrepancies between the training and service needs identified by the Regional Study Groups and the training program directors' ratings of practitioners in the competency survey were sought in this analysis.

Prevention

1) parent education, guidance, and counseling

2) consider changing family constellations

3) multidisciplinary team work

4) make early and appropriate referral

5) establish better high risk registry for infants

6) establish better high risk categories for children and adults (i.e., noise, drug abuse, etc.)

7) develop outreach for prevention in rural and low income areas (speech-language pathologists only)

8) expand prevention knowledge and service via high risk programs, etc.

Identification

1) develop good communications among parents, medical personnel, rehabilitation personnel, teachers, and our profession to assist referral and follow-up

2) increase expertise in identification instruments specific to age and disorder

3) improve communication with professional peers and allied professions

4) include family, other health professionals and client in identification team.

Assessment

1) obtain and use evaluation information from other professional agencies, family and client case histories and observations and family observations

2) increase evaluation expertise in all disability groups, including hearing impaired, adolescent and non-English and for audiologists alone, the learning disabled with hearing loss

3) expertise to administer, interpret, and report clearly (oral and written) multidisciplinary assessments

3) discriminate between maturation and intervention factors in children

4) add long term information to evaluation of outcome

5) share outcome information with client, family, and other professionals

6) help families understand grievance mechanisms

7) use outcome data for discharge planning and to program therapy for similar clients.

Administration

1) establish mechanisms for collaboration with allied health professionals.

Regional Concerns

1) train families in rural areas to assist in early identification and remediation

2) build cooperative programs with other disciplines

3) maintain appropriate caseload size

4) provide more service in rural areas

5) provide more continuing education to rural professionals.

As for the training needs, no discrepancies exist between the needs identified by the Regional Study Group participants and educational program directors' ratings of undergraduate programs. The areas in which no discrepancy exists or no data were available to support or deny the training and service needs expressed in the Regional Study Groups are found in the Discrepancy Analysis Report: Training And Service Needs Versus Education Program Directors' Perceptions of Graduates.

RESEARCH TRAINING

Two forms of a basic questionnaire were developed as a means of assessing opinions about what educational and/or training experiences should be included in the preparation of: (1) professionals planning careers which require that they be knowledgeable users of research (presumedly, these would include all practitioners whose education culminated in a master's degree in speech-language pathology (SLP), audiology(A), or SLP and A); and (2) professional planning for careers in which they would be contributors to research activities, either basic or applied (presumedly, this category would include primarily persons trained at the Ph.D. level).

Finally, those instances where the values for a given content area and professional specialization area differed by 15% or more when comparisons are made for the CM and CD levels were viewed as an indication that the respondents believed the value of the experience differed for persons preparing to be users (Master's level) versus those preparing to be contributors (doctoral level) to research activities.

Quadrant I

Respondents uniformly agreed that educational and/or training experiences in content areas from within the discipline were important or essential to preparation for careers as users of research. Only four values out of a possible 30 were identified as important or essential by less than 50% of the respondents -- and the four responses were reciprocally linked. Less than 50% of the respondents believed that educational and/or training experiences in hearing disorders was important and/or essential to the preparation of speech-language pathologists at either the master's or doctoral level. Similarly, less than 50% of the respondents identified preparation in speech-language disorders as important or essential to the education and/or training of audiologists. Seven figures exceeded 85% within the quadrant. Since any percentage value that exceeded 85% may be considered as falling well within the top of this distribution of scores, these items may be considered to be of special importance to the education/training experiences of persons preparing for clinical specializations within this professional field. The items receiving high ratings were preparation in the normal processes of human communication for persons preparing for dual certification with speech-language pathology and audiology emphasis within their doctoral education program; speech/language disorders preparation for persons at either the master's or doctoral levels in the speech-language pathology area of professional specialization; preparation in hearing disorders for persons preparing to be users of research in audiology; and research experiences for doctoral students in all three of the professional interest areas. In only one instance was there a discrepancy of 15% or greater between the percentage of responses about preparation of persons to be users of research and those about preparing persons to be contributors to research activities. In that instance, they rated research activities necessary for the preparation of users of research in speech-language pathology to be 70% and for the contributors of research -- 89%.

While the primary interpretation applied to Quadrant I is that all of the content areas were considered important and essential to the preparation of persons planning for careers as users or contributors of research in clinical areas of professional endeavor, it is perhaps disturbing that there appears to be a trend for rather narrow professional training to be perceived as desirable by the respondents to the questionnaire. From a superficial perspective, one might wonder why any of the values in Quadrant I fell below 50%.

Similarly, one might ask why any of the percentages regarding the normal processes fell below 100%. One answer may come from an analysis of the ten individual questions and the responses regarding different areas of professional activity but this was so small that it may be an artifact. There were four instances in which there were discrepancies of 15% or greater between the responses for master's and doctoral level preparations.

Even recognizing that rather large differences exist in the size of the membership sampled in Quadrant I as compared to Quadrant III, the decision to report the data as percentages allows some rough comparisons to be made. If one compares the data in Quadrants I and III, it can be observed that a very high priority is assigned to the normal processes of human communication and research training for persons preparing to be users and/or contributors to research, regardless of whether they are preparing for essentially clinical areas of specialization or for research areas of specialization. Comparisons across Quadrants I and III also reinforces the interpretation that educational/training experiences become highy specialized for persons in each of the professional areas. The respondents clearly felt that such specialization was desirable (although some would argue that it runs the risk of overly narrow training within the discipline).

Quadrant IV

The 48 values reported in this quadrant reflect the responses to the content areas from "outside of the discipline" content areas deemed necessary for persons preparing to be users or contributors to the research activity in essentially scientific professional areas. Thirty-seven of the items were identified as important and/or essential by less than 50% of the respondents. Such a wholesale listing of areas deemed to be of low import for research preparation, also speaks to the narrowness of preparation for scholars in our discipline. The exception to that trend is seen with respect to the area of linguistics where 93 and 96 percent of the respondents reacted that preparation in linguistics was important or essential for persons preparing to be users or contributors to research in language science. There were nine instances in which discrepancies of 15% or greater were observed between ratings for the CM and CD categories. Six of those discrepancies were related to differences in the expected levels of preparation for persons preparing for user and contributor roles in hearing sciences.

The general trends which might be observed by comparing Quadrants II and IV that with the exception of the areas of psychology and linguistics, little support exists among the members sampled to indicate that any of the other outside content areas are either important or essential to the preparation of persons preparing to work in clinical and/or research careers encompassed by the discipline of human communication and its disorders. Such a narrow philosophy of training may have deleterious effects on the potential for the language development of the field. New technologies and our ability to interact and collaborate with other professional disciplines are two areas where broader training may be requisite to the achievement of the long range goals for the profession and the academic discipline. Broadening the academic preparation may be important to recruitment and retention of professionals within the field of human communication and its disorders. Table 2 describes the directions in

TABLE I
PERCENTAGE (%) OF "IMPORTANT AND/OR ESSENTIAL" RATINGS FOR COLLAPSED CONTENT AREAS BY PROFESSIONAL AREAS AND DEGREE LEVELS

ACADEMIC CONTENT AREAS	AREAS OF PROFESSIONAL SPECIALIZATION					
	Speech-Language Pathology	Audiology	Speech-Language Pathology and Audiology	Speech Science	Language Science	Hearing Science
	CM/*CD	CM/CD	CM/CD	CM/CD	CM/CD	CM/CD
N	470/162	299/115	119/52	11/30	6/16	3/29
		I			III	
Normal Processes of Human Communication	72/82%	70/73%	81/87%	82/93%	68/74%	73/80%
Sp/Lang Disorders	89/85	44/32	79/81	55/50	73/64	7/19
Hearing Disorders	49/46	85/83	67/77	35/20	40/35	93/73
Clinical Practica	76/66	65/56	76/74	23/23	72/44	30/33
Research (Orientation and Practica)	70/89	75/89	72/86	73/89	83/94	100/90
		II			IV	
Social Science (excluding Psych) and Humanities	28/32	21/20	25/32	21/30	33/37	15/34
Psychology	59/61	51/52	56/63	36/46	64/59	40/61
Linguistics	73/73	36/32	63/65	40/48	93/96	5/36
Bio. Sciences	44/51	49/53	47/65	42/58	13/29	45/69
Math, Comp. and Physical Science	38/53	47/63	41/68	37/64	18/35	55/78
Health Sciences	29/19	23/16	26/29	11/7	15/10	0/12
Education	31/22	18/20	25/28	8/5	28/23	0/11
Engineering	13/22	22/32	20/35	23/33	0/12	45/60

*CM - collapsed master's
CD - collapsed doctoral

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Table 2 (Continued)

DIRECTION IN WHICH THE INDIVIDUAL CONTENT AREA ITEM MEANS DIFFER (± 15%) FROM THE MEANS OBTAINED WHEN ITEMS ARE COLLAPSED INTO 13 GENERAL CONTENT AREAS. MEANS FOR GENERAL CONTENT AREAS ARE SHOWN IN ().

General Content Areas	Master's	Doctorate
Psychology	(56%)	(57%)
62. Experimental psychology	+	+
64. Counseling psychology		-
65. Psychometrics	+	+
66. Developmental psychology	+	+
67. Psychobiology	-	+
68. Neuropsychology		+
69. Social psychology	-	-
70. Organizational psychology	-	-
Linguistics	(60%)	(56%)
71. Linguistic theory/Philosophy of language		+
72. Phonology	+	+
75. Teaching English as a second language	-	-
77. Sociolinguistics, dialectology	-	-
80. Special purpose languages (sign language, gestural communication)		-
Biological Sciences	(45%)	(55%)
83. Human physiology	+	+
86. Neuroscience, neuroanatomy and neurophysiology	+	-
88. Embryology		-
89. Biochemistry	-	-
90. Biophysics and biomechanics	-	-
Mathematics, Computer and Physical Science	(41%)	(60%)
91. Basic mathematics	+	+
93. Computer and information science	+	+
94. Data processing	+	+
98. Advanced physics	-	-
99. General chemistry	-	-
100. Advanced chemistry	-	-

DESCREPANCIES BETWEEN RESEARCH SURVEY AND ASHA CERTIFICATION STANDARDS

As part of the total Professional Self-Study Project the committee examined the relation of the findings from the research competency survey to the profession's standards as described in the ASHA certification standards and to those opinions about the needs of the profession expressed by the membership at a series of regional meetings.

Two findings from the comparisons of research survey data and ASHA certification standards are of interest. First, that the results of the research survey reflect the ASHA certification standards closely. Respondents strongly support the value of specific content area coursework in communication as appropriate to each professional area, but they give weak support to those content areas that might fall under "related" and "basic communication processes" (except normal communication processes). Respondents to the research survey appeared to make their judgments correspond to the ASHA certification standards: where the standards are specific (as for example "major professional area"), the respondents gave high value to these items; where the standards are general (as for example "general background"), the respondents gave low value to these items. It appears, therefore, that the more specific the certification criteria, the higher value informants place on these items. This finding may suggest the need for still greater specificity in certification standards, but a more productive approach might be to recast the certification standards in more general terms throughout so to avoid making the other than strictly professional contents appear to be of little importance, and to insure greater value to general education.

Second, there is no statement in the standards that suggests that the applicant for the CCC is expected to have had training and experience to prepare him/her to do or use research in the relevant area. While not requiring a research experience, the ASHA certification standards mention overview of research, introduction to graduate study, introduction to research, critical review of relevant research, research procedures and techniques as acceptable to a maximum of three semester hours and academic credit for thesis or dissertation as acceptable to a maximum of three semester hours. The standards state that statistics beyond the introductory course will be allowed to a maximum of three semester hours.

DISCREPANCIES BETWEEN RESEARCH SURVEY AND RESEARCH NEEDS

In contrast to the research survey findings, the participants in the Regional Study Groups expressed a great need for research information, suggesting that they perceive a need for the products of both basic and applied research if they are to meet the service needs of the communicatively disordered. They stressed the importance of the clinician's own exposure to research, both as consumer and initiator.

It was noticed that the Regional Study Group Report suggests a lack of sophistication about the nature of research and an underlying "appeal to authority" rather than to themselves for needed information.

2) What should be the content and objectives of graduate education in communication disorders?

3) What is the need for a professional doctorate in communication disorders?

4) How should undergraduate and graduate education in speech-language pathology and audiology interface with other areas of university training?

5) How may we better prepare clinicians for the realities of providing services to the communicatively disordered in a variety of settings?

6) How may we prepare speech-language pathologists and audiologists for a changing society?

7) What should be the role of specialty training in relation to minimum standards for professional preparation in speech-language pathology and audiology?

8) What should be the role of continuing professional education in meeting the full range of needs of faculty, clinical service providers, administrators, and scientists in human communication and its disorders?

9) How can we improve the role of research and educate speech-language pathologists and audiologists to be competent users of research?

10) What steps should we take to insure that graduates are able to use and understand advancing technology for clinical service and research?

APPENDIX C

An Invitation for Nominations
1983 National Conference on Undergraduate, Graduate, and Continuing Education

The Ad Hoc Advisory Committee for the Professional Self-Study Project invites nominations for participants in ASHA's four-day 1983 National Conference on Undergraduate, Graduate, and Continuing Education, scheduled for April 1983.

"Knowledge and Service: Products of Education in Human Communication and its Disorders," the Conference theme, will address 10 major issues, and resolutions will be developed relative to future directions for undergraduate, graduate, and continuing education.

The basic issues identified by the Ad Hoc Advisory Committee are:

1. What should be the content and objectives of undergraduate education in communication disorders?
2. What should be the content and objectives of graduate education in communication disorders?
3. What is the need for a professional doctorate in communication disorders?
4. How should undergraduate and graduate education in speech-language pathology and audiology interface with other areas of university training?
5. How may we better prepare clinicians for the realities of providing services to the communicatively disordered in a variety of settings?
6. How may we prepare speech-language pathologists and audiologists for a changing society?
7. What should be the role of specialty training in relation to minimum standards for professional preparation in speech-language pathology and audiology?
8. What should be the role of continuing professional education in meeting the full range of needs of faculty, clinical service providers, administrators, and scientists in human communication and its disorders?
9. How can we improve the role of research and educate speech-language pathologists and audiologists to be competent users of research?
10. What steps should we take to insure that graduates are able to use and understand advancing technology for clinical service and research?

The Advisory Committee will identify conference participants from the pool of nominations submitted in order to achieve broad representation of the profession. The information you provide will insure meeting this goal.

Please keep in mind the following points as you consider nominations.

1. Participants will be expected to meet their own expenses.
2. Participants will be expected to attend the conference from the beginning to the end of the four-day period.
3. Individuals may nominate up to three (3) potential participants and may nominate themselves.

The deadline for receiving nominations is **November 15, 1982.** Letters will be sent to invited participants by January 1, 1983. Final information as to meeting dates and location will be available at that time.

To nominate an individual for consideration as a participant, return the completed nomination form to Trudy Snope, at the ASHA National Office (301-897-5700).

Ad Hoc Professional Self-Study Advisory Committee Members

Patrick J. Carney; Eugene B. Cooper; Francine Dove; Carol Ehrlich; Gerald Freeman; Susan L. Gilmore; Theodore J. Glattke; David P. Goldstein; Katherine Safford Harris; Michael Hartford; Audrey L. Holland; James B. Lingwall, Project Administrator; Noel D. Matkin; Lois McDermott; Fred D. Minifie, ex officio; Kenneth L. Perrin; Carol A. Prutting; Norma S. Rees, Chair; Robert L. Ringel; Robert Screen; Trudy Snope, Project Director; Mary Lovey Wood; and Phillip A. Yantis.

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COURSE CONTENT

MONDAY
9:00-10:00 A.M. Registration and Orientation
10:00-12:00 NOON Recognition and Diagnosis
1:00- 5:00 P.M. Classification of Problems

TUESDAY
9:00-12:00 NOON 1 First steps in Treatment Process
2 Specific Treatment Procedures Utilized
1:00- 5:30 P.M. 1 Continuation of Demonstration of Techniques Used in First Step of Treatment Process
2 Demonstration of Techniques Used in Second Step of Treatment Process

WEDNESDAY
9:00-12:00 NOON 1 The Case History
2 Examination of the Patient
3 Classification of the Problem
1:00- 5:00 P.M. Planning the Therapeutic Regimen

THURSDAY
9:00-12:00 NOON 1 Continuation of Techniques Used in Second Step of Treatment Process
2 Speech Problems Associated with Oro-Facial Muscle Imbalance
1:00- 5:00 P.M. Demonstration of Techniques Used in Third Step of Treatment Process

FRIDAY
9:00-12:00 NOON 1 Continuation of Techniques Used in Third Step of Treatment Process
2 Discussion of and Treatment for Successful Management of Thumb, Finger, and Lip Sucking Habits
1:00- 5:00 P.M. 1 What are Some of the Reasons for Failure in the Successful Treatment of the Problem?
2 Final Discussion Session

Nomination Form
1983 National Conference on Undergraduate, Graduate, and Continuing Education

Return this completed form by November 15, 1982, to:

Trudy Snope, Project Director
American Speech-Language-Hearing Association
10801 Rockville Pike
Rockville, Maryland 20852
(301) 897-5700

1. **Name and Professional Address of Nominee**

Last First Middle

Business Name

Street Address

City State Zip Foreign Country

2. **Daytime Phone Number**

( )

Area Code Phone Number

3. **Highest Academic Degree** (check only one)

- Bachelor's ☐ 1
- Master's ☐ 2
- Doctorate ☐ 3
- Other (specify) ____ ☐ 4

4. **Academic Area of Highest Degree** (check only one)

- Speech-language pathology ☐ 1
- Audiology ☐ 2
- Speech-language pathology and audiology ☐ 3
- Speech-language or hearing science ☐ 4
- Other (specify) ☐ 5

5. **ASHA Membership**

☐ Current ☐ Previous ☐ None

6. **ASHA Certification** (Check only one)

- CCC—Speech-language pathology ☐ 1
- CCC—Audiology ☐ 2
- Both ☐ 3
- None ☐ 4

---

7. **Sex**

- Female ☐ 1
- Male ☐ 2

8. **Racial/Ethnic Group** (optional)

- American Indian or Alaskan Native ☐ 1
- Asian or Pacific Islander ☐ 2
- Black (not of Hispanic origin) ☐ 3
- Caucasian (not of Hispanic origin) ☐ 4
- Hispanic ☐ 5

9. **Primary Employment Activity** (check only one)

- Administration ☐ 1
- College or university teaching ☐ 2
- Consultation ☐ 3
- Direct clinical service ☐ 4
- Research ☐ 5
- Special education teaching ☐ 6
- Supervision ☐ 7
- Other (specify) ____ ☐ 8

10. **Primary Place of Employment** (check only one)

- College or university ☐ 1
- Preschool, elementary, or secondary school ☐ 2
- Hospital, clinic, or rehabilitation center ☐ 3
- Private practice ☐ 4
- Governmental agency (local, state, federal) ☐ 5
- Other (specify) ☐ 6

---

11. **ASHA Committee or Board Membership** (list the names of ASHA committees or boards on which the nominee has served during the past five years)

12. **Membership in related professional organizations** (RPO's) (list the names of RPO's of which the nominee has been a member during the past five years)

13. **Special qualifications of this person relative to this nomination are:**

14. **Identify, in order of priority, three of the ten issues** (see above list) **in which the nominee is likely to be most interested**

1. Issue # ____
2. Issue # ____
3. Issue # ____

Your Name: ____

APPENDIX D

American Speech-Language-Hearing Association
10801 Rockville Pike • Rockville, Maryland 20852 • (301) 897-5700 (Voice or TTY)

List of Participants* 1983 Conference on Undergraduate, Graduate and Continuing Education
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*Included are presenters of discussion papers, speakers, Professional Self-Study Advisory Committee, Executive Board, and ASHA National Office Staff. The total number of participants is 127 as of March [illegible], 1983.

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APPENDIX E

American Speech-Language-Hearing Association
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PROFESSIONAL SELF-STUDY PROJECT

PHASE III

EVALUATION FORM

PHASE III GOAL: Collect and analyze data from directors of training programs, practitioners, and supervisors to determine competencies of speech-language pathologists and audiologists who have been trained to serve the communicatively handicapped.

INSTRUCTIONS: As a member of the Professional Self-Study Advisory Committee please rate the degree of satisfaction with which you feel each of the objectives of Phase III was met. Check the appropriate line for each of the activities or factors below.

	Very Satisfactory	Moderately Satisfactory	Somewhat Unsatisfactory	Very Unsatisfactory
A. Developing the Competency Surveys based on the clinical service needs of the communicatively handicapped identified by the Regional Study Group participants in Phase II.	58.3%	33.3%	8.3%	
B. Identifying directors of training programs, supervisors of speech-language pathology and audiology, and practitioners to be survey respondents.	91.7%	8.3%		
C. Collecting data from the survey respondents identified in B.	91.7%	8.3%		
D. Conducting follow-up to improve response rate from respondents.	83.3%	16.7%		
E. Analyzing survey data within and across groups (directors of training programs, supervisors, practitioners) to assess competencies of speech-language pathologists and audiologists.	83.3%	16.7%		

	Very Satis-factory	Moderate-ly Satis-factory	Somewhat Unsatis-factory	Very Unsatis-factory
F. Defining the needs of the communicatively handicapped that are not being addressed, or addressed adequately, by the profession.	54.5%	45.5%		
G. Completing a report based on the data obtained from the surveys and the discrepancies between the identified needs and the data collected.	81.8%	18.2%		
H. Planning the activities of various subcommittees of the Advisory Committee.	72.7%	27.3%		
I. Clarity and appropriateness of meeting objectives.	72.7%	27.3%		
J. Efficiency with which meeting objectives were met.	90%	10%		
K. The leadership of the ASHA National Office in the Project.	100%			
L. My contributions as a member of the Advisory Committee.	11.1%	77.8%	11.1%	
M. Logistic arrangements for the meetings of the Advisory Committee.	81.8%	18.2%		
N. Overall success of Phase III.	81.8%	18.2%		

OTHER COMMENTS:

- Great!
- National Office staff support has been excellent!
- Trudy has been a major contributor to the success of this project.

OTHER COMMENTS (CONT.)

- o In the discrepancy analysis we discovered a disappointing number of questions which were not answered by the survey process. Condensation of such a mass of data probably inevitably requires loss of some important items. Discrepancies, in the administrative area, for example, were condensed by leaving out four out of five needs and focusing only on one. The rest of this process I feel good about.

- o I enjoyed helping the Project get public representation for the Regional Meetings. There is so much more going on, though, into which I feel I have little input. The subcommittee structure is certainly a necessary one if anything is to get done, especially with so large an overall Advisory Committee. It seems, then, a necessary concurrent fact that those of us who are on subcommittees whose work seems to be aside from the mainstream of whats going on now, those of us whose subcommittees' work has been more or less completed, will, at this point in the Project's work feel left out. In sum, I think the Project is doing good work and only wish I felt I could take more credit for it.

APPENDIX F

KNOWLEDGE AND SERVICE: PRODUCTS OF EDUCATION IN HUMAN COMMUNICATION AND ITS DISORDERS

Issue Number One

What should be the Content and Objectives of Undergraduate Education in Communication Disorders?

Robert L. Erickson
Western Michigan University
Kalamazoo, Michigan

April, 1983

> "Cheshire-Puss," said Alice, "would you tell me, please, which way I ought to go from here?"
>
> "That depends a good deal on where you want to get to," said the Cat.
>
> "I don't much care where . . ." said Alice.
>
> "Then it doesn't matter which way you go," said the Cat.
>
> ". . . so long as I get somewhere," Alice added as an explanation.
>
> "Oh, you're sure to do that," said the Cat, "if you only walk long enough."
>
> (Lewis Carroll)

PREFACE

Along with each of nine other individuals I have been assigned to prepare a preliminary paper which discusses a specific issue ". . . broadly and in depth *without moving into areas to be covered by other presenters*" (italics added). It must be acknowledged at the outset, then, that I have found it virtually impossible to focus quite that sharply just on undergraduate education in communication disorders. Other issue presenters likely will have experienced similar difficulties, for the topics to be addressed by this conference are inextricably inter-related.

It is particularly difficult to contemplate undergraduate educational objectives and content except as these relate to our expectations of graduate education--possibly including specialty training or even the professional doctorate--and except as the objectives and content may interface with other areas of university education. Nor is it feasible to divorce our concerns about undergraduate education from our desire to insure that advancing technologies be humanely and fruitfully exploited, from the need for our clinicians--regardless of work setting--to be perceptive users of research, or from our obligation to prepare practitioners to function effectively in a society increasingly characterized by rapid change. And certainly our recognition of the importance of continuing professional education--especially in view of the broader societal movement toward life-long learning--also has implications for undergraduate education in communication disorders.

The point may be obvious, but it warrants emphasis: no one of these ten conference issues is entirely independent of any other. As will be evidenced vividly and repeatedly in our forthcoming deliberations, the topics are by no means mutually exclusive. Our responses to each issue necessarily will influence, and will be influenced by, our responses to each of the others. Rightfully so. It augurs well for the conference, in fact, and is a testimony to the wisdom of our conference planners, that these overlapping issues are to be considered simultaneously in a single comprehensive forum. At the same time, the complexity of the interactions among our defined issues inevitably will be confounded even further by a multiplicity of other issues, both internal and external to our discipline, which we may or may not recognize or anticipate and over which we may or may not be able to exert significant control.

The conference issues can and must be differentiated, of course, in order to expedite our process. In the end, however, our decisions--the resolutions we adopt and the actions we recommend--must reflect our clear recognition of their mutual interdependence. Our recommendations also must take into balanced account our disciplinary and professional histories, the salient features of our current status and, as best we can discern them, the various contextual trends--economic, governmental and societal--which may play significant roles in shaping our future.

It is further imperative, in my view, that our recommendations be based upon an unequivocal and unmistakable commitment to a common mission: the advancement of knowledge and the enhancement of service. In the absence of an explicit reaffirmation of our dedication to this mission, it seems to me, our answers to the question, "What should be the content and objectives of undergraduate education in communication disorders?" (and to any other conference issue) will be little noted, much less endorsed or implemented, by any of the constituencies we seek to represent. The long term best interests of our students, of our colleagues, of the communication handicapped and of society at large will be well served by the present conference in direct proportion to the degree in which our individual special interests and our collective self-interest are able to be subordinated to this compelling mission. We must be clear on where we want to get.

DIMENSIONS OF THE ISSUE

Even in "simpler times" we might have felt that the issue of undergraduate education alone could merit our full attention for at least three days of discussion. Such was the case, for example, fourteen years ago when some 90 selected participants gathered in New Orleans for the ASHA Conference, "Undergraduate Preparation for Professional Education in Speech Pathology and Audiology" (ASHA, 1969). The more extended deliberations and seemingly clearer future notwithstanding, the New Orleans participants certainly did not expect to arrive at final answers to their questions about this aspect of student preparation. Nor were the recommendations of the earlier Highland Park Conference, "Graduate Education in Speech Pathology and Audiology," which necessarily also had considered certain basic undergraduate issues, intended as final or definitive (ASHA, 1963). Nevertheless, although the impact of neither conference has been universal, the influence of both has continued to permeate much of our thinking about undergraduate education in communication disorders--its broad foundation and its more specialized core.

Liberal Arts and Sciences

In both conferences strong but not unanimous support was expressed for a broad liberal arts and sciences education at the undergraduate level, although a comprehensive definition was not attempted in either instance. Both conferences appear to have viewed this broad liberal education in terms essentially congenial with the conceptualization offered by Crawford, then Graduate Dean at the University of Minnesota and Chairman of the Council of Graduate Schools in the United States, in his Highland Park keynote address (ASHA, 1963).

> In the process of liberal education we seek to introduce our students to the idea that there is an accumulated body of knowledge, that very often when one has a curiosity or a problem one can find the answer by searching the libraries. Indeed I think of liberal education as a process in which we introduce our students to some of the modes of entry into that storehouse. We give them the keys. A liberally educated man then has some general idea of the extent of man's knowledge in various fields, and he knows how to find what has. . . been stored up. . . . . He knows what some of the keys look like, and he has had a little practice in fitting some of the keys into the locks.

If Crawford's view implies a lesser emphasis on the humanities than might be seen in other views of "liberal arts and sciences," his view does argue nevertheless against a narrowly specialized undergraduate education. Of equal importance to Crawford, regardless of what disciplines might be identified as providing an appropriate undergirding for professional education, was the careful avoidance of curricular rigidity. "I hope that you will . . . leave room for appropriate variations in good institutions. I hope also that your prerequisites can be kept flexible so that we can select good students even if they do not conform to a particular pattern."

Among the resolutions subsequently adopted by most of some 100 Highland Park participants, two which relate specifically to the selection of graduate students may usefully be recalled here.

> RESOLVED that . . . an undergraduate program should include a preponderance of work in the generally recognized liberal arts and sciences curriculum *with due concern for selection of those areas which support graduate professional and scholarly activities* (italics added).
>
> Whereas there is a scientific approach to all problems, though the

> laboratory and clinic workers may use different tools and different techniques. RESOLVED that there needs to be formal education in the scientific method, in addition to or as a part of a basic liberal education.

Within the theme of a broad liberal education, then, it may be seen that a science flavor tended to be dominant in 1963. Physics, biology, psychology, and mathematics were identified as the liberal arts and sciences foundation for further graduate study. At the very least (if only by omitting specific reference to the humanities), the desired broad background which emerges appears to be somewhat broad within somewhat narrowed limits.

With reference to this same question, undergraduate conference participants in New Orleans appear later to have reflected a similar orientation toward the need for our students to obtain a broad education. Other than in the summarized post-conference questionnaire responses of some participants, however, the proceedings of that conference provide few synthesized conclusions (ASHA, 1969). No specific resolutions were presented or debated, but from a number of individual sub-group reports--and in spite of some notable diversity (for example, some sub-group advocacy was expressed for a return to the baccalaureate as an acceptable professional entry level)--it is possible to glean a variety of pertinent impressions. There was general endorsement of a liberal arts and sciences foundation; and, while emphasis on such areas as mathematics and physics again was suggested, allusions were made here to the humanities as well. It must be noted, all the same, that one sub-group also is reported to have ". . . decided that knowledge, as such, is obsolete and that skills are the things with which the profession should be concerned." The plea for flexibility was heard here, too, in terms especially of the ". . . impossibility of training students to be creative and innovative when they are locked in a . . . pattern." (We shall look a bit more closely at the term "training" later in the present paper).

Flexibility was addressed quite frequently, in fact, with reference to individualized programs of study and with reference to differential foundations for students pursuing different eventual career roles. One sub-group came to feel that absolutely no specific undergraduate content recommendations should be made. Another, while affirming the need for a liberal base, asserted that this base should be flexible both in pattern and in timing; i.e., these participants called for consideration of the possibility that an earlier professional preparation and later liberal arts exposure might be a more appropriate sequence for some students.

Presently, if the views summarized in our self-study research survey report (ASHA, 1982 a) are representative, there is reason to believe that a broad liberal arts and sciences education is deemed relatively *un*important by a significant number of workers in speech, language and hearing. That judgment is contradicted, of course, in the summary of our regional self-study groups' recommendations where once again it is urged that the preparation of speech-language pathologists and audiologists include a "strong preprofessional education in the liberal arts" (ASHA, 1981a). Current requirements for the ASHA Certificate of Clinical Competence also *encourage* "the broadest possible general educational background for the future clinical practitioner" with more specific emphasis again urged in the natural and physical sciences (ASHA, 1982 b); but (wisely) no arts and sciences areas of study are specifically mandated.

In any case, the actual extent to which our undergraduate programs today deliberately do include study in the liberal arts and sciences as an essential ingredient is not clear. It also is not always clear what we have meant by "liberal arts and sciences," nor is it entirely clear what we have expected in the way of results from a broad liberal education.

One thing does seem exceedingly clear: it is time, and it is timely, that we re-examine our philosophy and our practices relative to the content, the sequencing, and the objectives of the liberal arts and sciences component of undergraduate education in communication disorders.

Human Communication and Its Disorders

The types and amounts of disciplinary and professional core content to be included at the undergraduate level were topics also addressed by both of the conferences previously cited. During the Highland Park graduate conference it was estimated that

> . . . about one-quarter of the participants favored undergraduate specialization in speech and hearing science in which no attempt is made deliberately to introduce therapeutic skills, while about three-quarters indicated that such skills should definitely be taught and that almost the sole purpose of undergraduate courses in speech and hearing is to prepare for the training of such skills. No one seriously argued that a terminal master's degree candidate should be given a broad scholarly undergraduate training divorced from the rehabilitative concept, then in one additional year have instilled into him enough skills to assure clinical competence. One may infer a fairly heavy rehabilitation training on the undergraduate level (ASHA, 1963).

Support for integrated academic and professional studies appears also when the conference summary paraphrases Plutarch's somewhat earlier observation that "medicine, to produce health, has to examine disease, and music, to create harmony, must investigate discord" in these words.

> There is no fundamental dichotomy between the study of normal and abnormal processes. The truly scientific study of material in the clinic may be no whit less rigorous or theoretically rewarding than material in the laboratory. The study of pathological material may heighten understanding of normal processes as well as the obverse.

While the Highland Park participants recommended (but by no means unanimously that all students pursuing specialization--be it research, clinical or teaching--in our field should have studied in certain specific core subject matter areas, they did not specify when that core was to be taken:

> RESOLVED that in the selection of students for graduate education in speech pathology and audiology, the amount and type of preparation in speech and hearing subjects should remain unspecified.

They did also recommend, however, that students without specific undergraduate preparation in speech and hearing be expected to complete those courses prerequisite to graduate study. Thus, one might draw careful inferences about an undergraduate core from their listing of the following subject matter areas: linguistics, anatomy, physiology, experimental psychology, developmental psychology, methodology of measurement, voice and speech science, development of speech, hearing and language function, and--presented without any further delineation--"subject matter areas that contribute to the further understanding of disorders of verbal symbolic communication behavior." Practicum experience, as such, was not specifically mentioned.

The Highland Park group was not explicit about the matter of course sequencing, although ". . . a progression from basic subject matter to a core in normal speech and hearing processes followed by a core in disorders was implicit in the discussion." But, while a sequence may have been implied, the conference reporters were unequivocal in noting also that "rigidity in this respect is judged to be undesirable." For that matter, considerable reservation had been expressed even regarding the wisdom of describing any curriculum content expectations in such great detail.

Participants in the New Orleans conference also appeared reluctant to prescribe a specific program of undergraduate professional education, although some were inclined toward even greater flexibility in this regard than were others. One sub-group was very firm in its belief that, for a variety of reasons, no specific program of undergraduate professional education should be recommended. A second was willing to develop "examples of broad areas" to be studied at the undergraduate level but cautioned that the core should remain flexible. Two groups explicitly called for innovative and flexible approaches to the sequencing of areas of study. Yet another of the nine sub-groups, while suggesting some possible core emphases, predicated its recommendations upon a belief that ". . . the concept of total dependence on the all-purpose professional is unworkable;" and, therefore, also suggested the development of multiple tracks of preparation (an approach which found favor with other sub-groups as well). All of the subgroups favored the inclusion of some amount of clinical practicum in our undergraduate programs, and nearly all of the reports made some reference to the need for a more exact and more generally accepted definition of the expected outcomes of undergraduate education.

The questionnaire study conducted after the 1969 undergraduate conference does provide some additional indication of the general orientations of the participant group as a whole, basing those generalizations upon the responses of what appear (although the figures vary within the report) to have been 44 "consumers" (employers and supervisory personnel) and 32 "producers" (university personnel). These respondents recommended strongly that undergraduate preparation in our field be comprised of a liberal arts education plus preprofessional coursework and practicum experience. This programmatic configuration, ranked as first choice by 75 per cent of the consumers and 73 per cent of the producers, was preferred by a wide margin over a baccalaureate degree pattern which might include just the liberal arts education plus preprofessional studies (ranked as first choice by just 25 per cent of the producers and by only 16 per cent of the consumers). A science or humanity plan which would exclude any preprofessional courses and practicum was preferred by no consumer and by just one producer.

The design of the questionnaire itself (as well as ambiguities regarding numbers and types of respondents) precludes any precise interpretation of certain other response trends which might be of interest to us; but, in spite of such limitations and acknowledging some potential for error, it may be justifiable to conclude that the vast majority of consumers and producers alike endorsed an undergraduate "preprofessional core" consisting of study in the following areas: human growth and development, speech and hearing science, basic physical and biological sciences, anatomy-physiology of speech and hearing, and phonetics. Learning theory and linguistics also gained majority endorsement, but these areas of study were supported by less substantial margins in both groups. The questionnaire included no reference specifically to normal speech-language development.

Opinions regarding appropriate "professional core" areas of study at the undergraduate level, on the other hand, often were sharply different between consumers and producers. The only areas of reasonably close agreement were seen with reference to basic audiology (judged appropriate by 80 per cent of the producers and 88 per cent of the consumers), articulation disorders (producers, 52 per cent; consumers, 56 per cent) and hearing rehabilitation (producers, 30 per cent; consumers, 44 per cent). The other professional core areas listed and the percentages of producers and consumers, respectively, supporting the inclusion of each were: clinical evaluation (23, 44), stuttering (18, 44), diagnostic audiology (2, 16), voice disorders (18, 47), language disorders (16, 50), and clinical practicum (23, 47). Again, these figures are to be regarded with extreme caution. For example, the relatively low percentages reported here in support of clinical practicum--in contrast to the much larger percentages supporting inclusion of practicum when asked to rank possible undergraduate program patterns--is probably somehow an artifact of the forced-choiced questionnaire design wherein respondents were required to select *either* the undergraduate *or* the graduate level *or* both levels as *the* appropriate place for practicum experience. In spite of possible constraints on interpretation, though, it does appear--perhaps predictably--that consumers were far more inclined than were producers to prefer a rather comprehensive coverage of disorder areas in the undergraduate curriculum.

Do our present day undergraduate "core" programs conform at all to the types of patterns variously conceptualized at the Highland Park and New Orleans conferences? For that matter, in what way(s), if at all, do they embody other concepts advanced explicitly or implicitly by colleagues who have addressed these same or certain similar topics (e.g., Curtis, 1963; Feldman, 1981; Goldstein, 1970; Peterson and Fairbanks, 1963; Rees, 1981; or Siegel, 1980-81, to mention but a few)? How many undergraduate programs already provide an educational core similar to that which recently has been recommended by the Ad Hoc Committee on a Single Profession and its Credentialing (ASHA, 1982c)? These questions are fundamental to our deliberations.

Our individual and collective answers to such questions, however tentative, obviously will influence our approach to the issue, "What *should* be the content and objectives of undergraduate education in communication disorders?" It is equally obvious that current undergraduate practices are by no means uniform across the country--perhaps not even within individual states--and, further, that our individual perceptions of those practices tend to be based upon relatively few objective data.

It is particularly important, then, that we take into account any data--however impressionistic--which may help to clarify our view. And one source of variability, of course, lies in the continued existence of terminal baccalaureate degree programs in communication disorders. Not only do they exist in fairly substantial number; but, as Counihan (1982) has noted with some alarm, undergraduate enrollments in such programs have declined far less markedly in the past years than have enrollments in non-terminal programs.

One very clear and apparently substantial difference between terminal baccaluareate programs and the non-terminal undergraduate programs found in ETB accredited institutions may be seen in the comparative data compiled by Snope (1982). Based upon her examination of 50 terminal programs and 122 accredited programs, she reported the mean number of minimum practicum hours required by the former to be 152 (with a range of 0 to 400 and a standard deviation of 136.9). The mean number of minimum practicum hours required at the undergraduate level by accredited programs was reported to be 58.9 (ranging from 0 to 200, with a standard deviation of 67.3). It is additionally clear, we should note, that substantial overlap as well as large differences exist in practicum requirements between these two types of programs. The undergraduate practicum requirements in institutions which operate non-accredited graduate programs were not studied.

Snope also observed that the average number of undergraduate practicum hours actually acquired by students in terminal programs (Mean: 180.5; SD: 133.2) and those acquired both by speech-language pathology students (Mean: 72; SD: 101) and audiology students (Mean: 85.3; SD: 96.4) in accredited institutions tend slightly to exceed the average minimum requirements of each respective type of program. Of greater interest to us, perhaps, is her comparison of undergraduate audiology to undergraduate speech-language pathology students. While the magnitude of the difference here was small (and probably attributable to chance), and while we have no information regarding the *nature* of the undergraduate practicum experience in either case, this is one of the few instances in which there is any hint of a differential between the undergraduate preparation of audiology students from that of speech-language pathology students. Granting even that the Snope study did not seek to identify other possible differences, and granting further that no specifically pertinent hard data base appears to be available, still it seems likely that at least in accredited institutions the undergraduate education of audiologists tends to differ little from that of speech-language pathologists. This likelihood is at least as great among terminal programs, where few audiology courses usually are found. It is possible, then, that if *any* "common core" approach is to be found with any frequency among our undergraduate programs it is to be found in an intra-institutional disinclination to make substantial distinctions between these two designatable areas of professional practice.

Another characteristic of terminal baccalaureate programs noted by Snope, not unexpectedly, is that virtually all (upwards of 85 to 95 per cent) of them require matriculants to complete at least one "full course" in each of the following topical areas: articulation disorders, audiology, diagnostics, language disorders, and stuttering. Almost all (85 to 90 per cent) also offer and require "partial courses" dealing with aphasia, cerebral palsy, cleft palate, and voice disorders, and seventy per cent require coursework in aural rehabilitation. Among the "basic communication processes" areas, Snope looked only at language development and speech/hearing science (both are offered as full courses by about 85 per cent and required as content areas in about 95 per cent); but, given their extensive disorder requirements and their small numbers of full-time faculty members (mean of 2.7, compared to a mean of 11.8 in accredited institutions)--and even taking into account their average minimum requirement of some 40 semester hours of credit in the major field--it is improbable that the graduates of terminal programs will have had very much exposure to basic processes coursework. Although comparative data are not provided, it should be noted that a definitive "core" may be more uniformly common among our 70-75 terminal undergraduate programs than among those which are non-terminal. The desirability or appropriateness of that particular core and of other possible cores will be debated, of course (vigorously, we should hope), throughout our meeting.

Bachelor level practitioners, we might note at this juncture, rated themselves as significantly lower in competence than certified speech-language pathologists rated themselves on about 75 per cent of the 28 competency areas sampled in the survey phase of our professional self-study project (ASHA, 1982d), and the bachelor level personnel did not rate themselves higher than the certified on any skill. We must also note, at the same time, that practitioners in general were found wanting by the regional self-study groups in some of the same areas in which at least the certified practitioners rated themselves as having high competence.

Similarly, neither university program directors nor practicum supervisors rated recipients of just the baccalaureate degree as having high competence with any skill. In the instance of both of these groups of raters, however, the ratings of bachelor's degree recipients from non-terminal (and explicitly pre-professional) programs have been combined with the ratings of terminal bachelor's degree recipients. The effects of this collapsing of categories are unknown; but one quite naturally would assume that directors and supervisors associated with terminal bachelor's programs *do* perceive their own graduates as having high levels of competency in at least some skill areas and that this fact may have been obscured simply as an artifact of the data treatment process.

Certain other of the accumulated results of the self-study project also may be germane to our eventual consideration of possible core areas of study in human communication and its disorders. From the summary report of the regional study groups (ASHA, 1981) and the report of surveys and discrepancies (ASHA. 1982e) there emerge several recommendations which, although not presented with specific reference to any particular level of study, might well be considered in the context of undergraduate education.

Among the topical areas recommended for enhancement in the preparation of speech-language pathologists and audiologists are the following: normal developmental processes, sociolinguistics, and scientific methodology--each of which might also or rather be seen as part of the recommended broad liberal education foundation. The regional groups' listing of weak areas also included: counseling principles and procedures ranging from the conduct of single interviews to the maintenance of long-term helping relationships: multidisciplinary team functions and consultative roles; the interpretation of assessment and remediation practices and procedures to clients, family, and related professionals; the utilization of psychological and educational test results in diagnosing and remediating communication disorders; the communication of desired therapeutic outcomes in measurable terms; appreciation of professional self-worth: audiovisual and computer technology applications; and differentiation between linguistic variations and communication disorders (each of which, of course, might also/rather be included at the graduate level).

The foregoing selective list includes primarily those topics and areas which, because they seem somewhat generic, may be more appropriate than others for consideration at the undergraduate level. The listed items also are highlighted here because they are items which--more clearly than do some of the other items in the original summary--tend to suggest needs which focus on generalizable knowledge and understandings and interpersonal relations (in contrast to more technical skills). These areas of need, in turn, may be relatable to an "education versus training" question which constitutes the third dimension of our issue.

Education versus Training

In the preparation of our students, both at the pre- and the post-baccalaureate levels, there are elements of what most of us would regard quite literally as "training," and there are elements--historically more predominant--of "education." Both are important elements, but they are not interchangeable, and the terms themselves are not synonymous. To use the terms interchangeably, as we have been wont to do, may simplify discussion--but at the risk of our forgetting that there is a distinction to be made, quite probably a difference which does make a difference. To speak of student preparation *only* in terms of training--which we have become even more wont to do--may profoundly affect what we expect of them and of ourselves. Recognizing this, the National Council of Graduate Programs in Speech and Language Pathology and Audiology (1982) has articulated a philosophy which might serve as a guiding principle for all of us.

> We are a discipline that has always taken pride in having a scholarly view of teaching and learning as they relate to human behavior and communication, and we must recognize that the teaching in our educational programs must include teaching students to teach themselves. Such a philosophy precludes the conceptualization of our educational efforts as 'training.'

Accordingly, the members in attendance at the Council's third annual conference on graduate education unamiously endorsed the following recommendation.

> We recommend that the word 'training' be used with discretion as it applies to programs of preparation for speech-language pathologists and audiologists and that future publications and program listings of the Council use terminology which emphasizes the academic-educational heritage of the profession.

Lest we be tempted to dismiss the Council's action as "merely" a semantic exercise, we should remind ourselves that the terminology we use to define ourselves and our functions can convey unintended as well as intended messages to our audiences. For exactly that reason, for example, we have sought to substitute the word "clinician" for the word "therapist" in our professional vocabularies. Moreover, our words tend also to act retroflexively; they influence, as well as are influenced by, the ways in which we ourselves conceptualize our roles and responsibilities. This given, we should consider soberly the possible, and perhaps even probable, effects of our rather consistent use of the word "training" in reference to virtually all aspects of student preparation.

> Someone recently asked me how many students I had trained during my long career, and I answered, 'None'! I said that I'd had some meaningful contact with thousands of students but that training was for dogs, not for human beings. I feel our profession has gradually been warped away from its early emphasis on preparing carefully selected students to become healers or liberators. Instead, we seem to be training (what a miserably misguided word, that!) technicians in the training institutions approved by ETB. I suspect that most of our beginning students . . . want to help people. But somehow, during their long 'training' too many of our 'trainees' lose that fine hunger for meaningfulness (Van Riper, 1981).

Our frequent allusions to "training institutions" do connote an unmistakable emphasis on technical and vocational instruction. Granting that the term may be intended only as a simple and innocent shorthand form of reference to colleges and universities, the trade school connotation is nonetheless present. When even the most scholarly of our colleagues refer to "training programs," the presumed translation, we are assured, is "academic dpeartments." And certainly we all know that "trainee" actually means "student" and that our students must be educated as well as trained. Or do we? The effects of this lexicon may be insidious and more profound than we have realized.

Recalling here the previously cited self-study research survey which found that, with the exception of the areas of psychology and linguistics, little support existed for studies outside of the field of speech-language-hearing, we further note that--with reference to studies even within the field--the survey results were interpreted as suggesting that " . . . there appears to be a trend for a rather narrow professional training (sic) to be perceived as desirable . . . ." (ASHA, 1982a). Relatively few of the survey respondents believed it important for students to have ventured into areas such as history, literature and arts, (or even mathematics) and other topics which typically might be associated with the "strong education in the liberal arts" recommended so many times in the past and most recently by our regional self-study groups. That such studies, as well as more comprehensive intra-disciplinary studies, are antithetical to student preparation based upon a vocational school model should give us pause. A perusal of the Requirements for the Certificates of Clinical Competence (ASHA, 1982b), noting the frequency of references to "training," also will afford little reassurance along these lines.

If we have indeed moved toward a vocational training orientation, as implied by our nomenclature and by the self-study data, the forces underlying such a redirection have been considerable. In recent years we have witnessed widespread cries for "immediate relevance" in the university classroom, and there are growing tensions today in academe itself between career preparation and liberal education (a somewhat false dichotomization, incidentally, unless "career" is merely a euphemism for "first job").

In his critique a dozen years ago of medical education, Pelligrino (1970) observed that very few students enter universities to train their intellects, asserting further that "(such) goals are consciously rejected by increasing numbers of students who see in them the remnants of an outmoded social and economic caste system." Perhaps even more to the point, he continued

> Today's university . . . . has become mainly an instrument for mass education and the most effective means for socio-economic advancement. Society expects that our universities will prepare large numbers of young people for socially useful roles. It supports higher education with this expectation, and not primarily to increase the numbers of 'educated men' or 'scholars.' Students, too, . . . see (the university experience) mainly either as a means of providing the tools for some profession . . . or as a means of 'finding' themselves as persons.

The increasingly staggering costs of higher education--to the individual student and to the taxpayer--have exacerbated such views, as no doubt have our own professional preoccupations with what often have been market-place models of clinical accountability and mechanical definitions of the clinical process. Certainly the expectations of some employers that our graduates can be immediately skillful and efficient service deliverers, however understandable those expectations, are not conducive to broad non-technical educational programming in our universities. Urgently pressing service needs have sometimes caused us to set aside the truisms that "You can be the best, most skilled practitioner in your graduating class in 1980, but that's not going to be good enough in 1990. You have to be a progressive eclectic, building on experience and knowledge, and not an intellectual anarchist" (Siegel, 1980-81). In forsaking a training model, Siegel points out,

> Sometimes our students graduate with heads that are full to bursting and hands that don't work too well. That is, full of knowledge but a bit short of specific skills. That's uncomfortable for awhile, while they're fumbling with the stimulus cards on the table, and not putting the items in the right order during a test session, but that will come

> with experience. What is important is that they know why they are using those procedures at all, and why in that particular way.

We are faced by a dilemma, it may seem, and we no doubt may expect, at least in the near future, to experience increasingly frequent (and perhaps increasingly strident) external and internal demands for even greater emphases on skills development beginning at the undergraduate level. It is small comfort to realize that our field is not alone in feeling already the possible effects of a narrowing, often fragmented and technique-oriented approach to student preparation. The gravity of the dilemma promises, too, to be incrementally compounded by the fact that among our current and prospective students are our future educators (or trainers) our future clinicians (or technicians), and our future advancers (or custodians) of knowledge. Which they will be is largely up to us. Unless the matter is to be decided by others through our default, we must assume greater responsibility for establishing priorities and for shaping our future, as best we can, through the implementation of decisions which will serve most responsibly the advancement of knowledge and upon that base, the improvement of service.

Ringel (1981), among others, has commented on what appears to be a general trend among current researchers to focus on "the testing of and elaboration upon dominant theoretical views." Recognizing that such work is essential, he nevertheless asks with some concern, ". . . but what of the work that challenges and threatens to overturn our prevailing views? It is inquiry of this quality that throughout the history of science has made the greatest contributions to the advancement of knowledge." Citing a number of possible causes of the trends, he also points out that a research climate favorable for innovation is likely to be one which values such characteristics as open-mindedness, independence, imagination and flexibility; and toward those and other ends he argues persuasively for a reiteration and underscoring of the importance of a liberal arts and sciences background for researchers and other workers in our field.

If we suspect that the recommendations of our regional self-study groups represent simply a wistful backward look at our scholarly heritage or that Ringel's remarks reflect just the biased views of an arts and sciences dean, it is instructive to remember that similar concerns are frequently encountered outside of our own field and to note that equally cogent comments are heard in the non-academic world.

Writing recently in Physics Today, the director of the Sony Research Center in Yokohama described some differences between Japanese scientists/ engineers and those who he perceives to have been far more innovative and creative than the Japanese (whom he characterizes--on the whole--as having been more inclined to test, refine and apply existing knowledge). Among the factors accounting for this differential, he has included certain educational practices.

> Education is very homogeneous in Japan. Courses and text books are carefully standardized, so that (primary and secondary) students are taught the same things to the same level at the same time of the year from Hokkaido to Okinawa. . . . . Strictly speaking, Japanese parents show more of a desire for good schools than a good education. The competition for acceptance at good schools . . . has directed (children's) attention almost exclusively toward preparation for entrance examinations at each educational stage. The students learn more and more about examination-type problems rather than acquiring a deeper understanding through a more humanistic learning process. . . . . Training for examinations is not necessarily the best training for creative thinkers. Brand new concepts are born from independent, free thinking. The educational system in Japan does not leave much, if any time, for the development of independent thinking (and) this characteristic . . . may be restricting creativity that would lead science and technology in new directions (Kikuchi, 1981).

Others have commented on a dilemma like ours, but on a global scale, while suggesting at the same time that the time is right for changes. The world is approaching a "turning point," according to theoretical physicist Fritjof Capra, where societies are in a period of deline of the type which occurs when a culture has become too rigid in its technologies, ideas, and social organization to meet the challenge of changing conditions. Overemphasis on a mechanistic world view, Capra believes, "has led to the fragmentation characteristic of both our general thinking and our academic disciplines, and to the wide-spread attitude of reductionism in science--the belief that all aspects of complex phenomena can be understood by reducing them to their constituent parts" (Capra, 1982).

"From the second half of the seventeenth century to the end of the nineteenth, the mechanistic Newtonian model of the universe dominated all scientific thought," he continues, and "the natural sciences, humanities, and social sciences all accepted the mechanistic view of classical physics as the correct description of reality and modeled their own theories accordingly . . . and many of them hold on to these concepts even now that physicists have gone far beyond them."

Of special relevance to those of us in clinical areas of endeavor, Capra holds that this mechanistic view has led modern medicine, for example, to a point where physicians are unable to view illness--or to treat it--as a disturbance of the whole organism. "They tend to treat a particular organ or tissue, usually without taking the rest of the body into account, let alone considering the psychological and social aspects of the patient's illness."

The view of modern physics, on the other hand, he describes as "holistic and ecological . . . (emphasizing) the fundamental interrelatedness and interdependence of all phenomena, and the intrinsically dynamic nature of physical reality." Today he senses a massive shift beginning in the perception of reality, with thinkers in many disciplines beginning to move away from a mechanical world view toward a systems paradigm in which one sees, among other positive features, significant shifts in values--including a shift toward emphasis on inner growth and development (in brief, a shift toward some of the values which may be nurtured, in part, by less narrowly restricted educational perspectives).

In now having come very nearly full circle from our beginning point, it should be evident that we indeed are not alone in questioning and re-evaluating the orientations which have effected, and/or which have evolved from, our educational, service and research practices. It is equally apparent, I believe, that we now must intentionally and publicly renew a purposeful commitment to knowledge and scholarship as foundation pieces in the structure of our discipline and our profession. And while our attendant commitment to education must not be limited to any single stage of preparation, it is especially and critically important that our undergraduate students learn early, from our precepts and our practices, that this field of study in which they are embarked, human communication and its disorders, is not circumscribed by narrow educational boundaries or by rigid mechanistic views of human communication processes.

OBJECTIVES AND CONTENT: SOME PRINCIPLES AND CONSTRAINTS

We must strive to assure that matriculants in our undergraduate programs obtain liberating educations which--with reference to their formal graduate educations, with reference to future on-the-job experiential opportunities, and with reference to life long continuing education in varying configurations--prepare them optimally for the further pursuit of a variety of interrelated educational and career alternatives. In so striving, we must understand that the definition of "optimal preparation" will vary to some extent among our academic institutions and that allowance also must be made, within broad limits, for the differing needs and interests of individual students.

We can ill afford to be inflexible in our definition of the content, the objectives or the structure of undergraduate education in communication disorders. Indeed, we must become even more acutely sensitive and responsibly responsive to the changing needs, structures and functions of our internal and external constituencies while, at the same time, we must continue to affirm the value of knowledge and the singular importance of human understanding and compassion: our academic and professional leadership responsibilities must not be abdicated willingly or willfully.

If we are to foster quality undergraduate education and strive to promote innovation and excellence of performance in the diverse roles eventually to be assumed by our students, moreover, we must ackowledge that objective measures probably cannot presently be devised to assess the truly important long range products of higher education. We must, in that sense, become able better to manage ambiguity and paradox and to avoid a compulsive insistence that educational outcomes must be shaped somehow to fit our inadequate and often stultifying measurement tools. I believe, too, that we must scrupulously avoid the rigid specification either of sequence or of content in our undergraduate curricula. Although a planned progression from general to more specialized studies may be appropriate and effective for many students and most programs, there may be other students and other programs for whom an altered pattern or an integrated pattern is equally or more feasible and effective. Experimentation and innovation must in no way be precluded by narrow regulation.

Our undergraduate students will be well served, I believe, if our programs are designed to facilitate their beginning acquisition of understandings and skills centered on a disciplinary core, ". . . an informational base that includes: the normal areas of language, speech and hearing; the nature of disorders of human communication (again spanning the range of language, speech and hearing disorders; and commonly shared clinical practices and methodologies for evaluation and management of language-speech-hearing disorders." (ASHA, 1982c).

Undergraduate study should introduce the student to information and experience in each of these areas, with the greater emphasis on understanding normal processes. This by no means excludes study in the disorder areas, nor does it exclude clinical practicum; and it should by all means include opportunity for the observation of expertly conducted clinical work. The relative weightings of content areas as well as the sequencing and/or integration of subject matters necessarily will vary as a function of the philosophies of individual university programs and, although to a perhaps lesser extent, as a function of differential needs of individual students. The fundamental objective here is to better insure, without overstructuring their educational experiences, that our students acquire a more balanced knowledge base, the fundamental nature of which can come to be common to all members of our field, regardless of their areas of specialization. It would not be anticipated, however, that the common core would be acquired completely at the undergraduate level. This common core, for example, might be defined at the undergraduate level as consisting of:

(1) an elementary understanding of the anatomic, physiologic and neurologic bases of speech, language and hearing;

(2) an elementary understanding of the processes of normal development of language and speech and of the impact thereon of cultural, emotional, intellectual and physiological variables;

(3) an elementary understanding of acoustical, physiological and psychological correlates of auditory perception;

(4) the ability to recognize deviations from normal speech behavior and to classify such deviations in terms at least of the broad categories of disorders--articulation, language, fluency, voice;

(5) an elementary understanding of procedures and techniques utilized in the evaluation and clinical management of speech, language and hearing disorders and of the rationales underlying these approaches;

(6) the ability to transcribe accurately the utterances of normal speakers and of individuals whose speech varies from the normal;

(7) an ability to apply scientific methodlogy in the development of strategies for diagnosis and re/habilitation of individuals with communication disorders; and

(8) an ability to communicate professional information effectively, orally and in written form, to clients and their families and to workers in our own and other disciplines.

The foregoing is a suggestive listing, for purposes of discussion, and we shall certainly refine it or replace it as we seek to identify an undergraduate disciplinary/professional core in the form of resolutions which can be endorsed by our conference participants.

Our students will be poorly served, however, as will whichever publics they eventually serve, if we fail to go beyond a disciplinary/professional core in our recommendations for undergraduate education. We also must seek to insure that our students acquire a complementary broad liberal education if we are to nurture the fullest possible realization of their human and professional potentials. Beyond suggesting some possible extra-disciplinary emphases in areas of study most directly supportive of and supplementary to their more specialized core area studies, our students should be expected to develop functional understandings of areas traditionally regarded as constituting a general or liberal education, including:

(1) the humanities;

(2) the physical, biological and mathematical sciences;

(3) the social and behavioral sciences; and

(4) other cultures than our own.

In these latter areas, even more so than in the specialized core area, however, we might do well to avoid the specification of exact requirements and prescribed sequences of study. Not only must we remain flexible and adaptable programmatically, but we must in that process seek to maintain an academic/professional climate which encourages rather than stifles independence, innovation and open-mindedness in our students.

Finally, we should note that our discussion of undergraduate education, like those which have preceded and those which will follow it, will not--and should not be expected to--arrive at final answers. Nor are we likely to arrive even at a substantial number of answers which will unanimously be endorsed. There can be little disagreement, however, regarding our need to re-examine earlier answers periodically in a systematic fashion, and the coalescence in this conference of several critical issues should afford a particularly productive context in which to look again at undergraduate education in human communication and its disorders--to reassess where we wish to go and how best to get there.

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WHAT SHOULD BE THE CONTENT AND OBJECTIVES OF GRADUATE EDUCATION IN COMMUNICATION DISORDERS?

Kenneth L. Moll

The charge given to me by the conference committee was to prepare a discussion paper on the topic of the content and objectives of graduate education in communication disorders, with the specification that the paper "should approach the subject broadly and in depth without moving into areas to be covered by other presenters." Because I found the charge, as stated, to present a formidable, if not impossible, task, it was necessary to further define and limit the purposes and scope of this paper. First, it was assumed that this paper should provide some base for discussion at the conference, rather than presenting an in-depth discussion of various topics. Thus, it is focused on the identification and discussion of some general issues, questions, concepts, and principles. In particular, I will emphasize concepts and issues related to graduate education in general in order to provide a broader context for considering graduate education in our field. It also should be recognized that, although the selection and discussion of topics necessarily reflect my own views and biases, it is not my purpose, even if I could do so, to answer the question of what should be the objectives and, particularly, the content of graduate education in this field. Hopefully, those will evolve from the conference discussions. Second, it is clear that the broad topic of graduate education cannot be meaningfully approached in isolation from the topics of many of the other conference papers. The nature of graduate education depends on what conclusions are reached about undergraduate preparation as well as being closely related to such issues as appropriate interfaces with other university areas, professional doctorate education, degree of professional specialization, etc. Thus, there will be some overlap with such topics at various points, although detailed discussion of them is left to the other presenters. Within these limitations, however, it is hoped that this paper will provide a framework for conference discussions.

It also should be noted that, in preparing this paper, I drew heavily on a variety of sources, including the various surveys and reports of the Professional Self-Study Project, professional standards documents, position papers, and other references cited in the text. I understand that many of these documents will be available to the conference participants. However, I would like to call particular attention to the report of the Highland Park Conference on Graduate Education in Speech Pathology and Audiology (8). There is little question that, during the twenty years that have elapsed since that conference, there have been significant changes in the size, scope, and relative emphases of our field as well as in concepts and functions of higher education in general. However, many of the issues and the nature of the discussions at that conference still appear to be relevant today. Thus, I would urge conference participants to review that document.

Some General Considerations

Before dealing more specifically with the objectives and content of graduate education in our field, I wish to present some general concepts, definitions, and principles that underlie and provide a context for that discussion.

Nature and Scope of the Field

As recognized at the Highland Park Conference, one cannot talk meaningfully about education in the field without defining the nature and scope of the field. For the purposes of this paper and subsequent discussions, I will assume the general definitions contained in the report of the ASHA Committee on a Single Profession and Its Credentialing (1). Without worring about the labels used, this report incorporates some important concepts that will necessarily shape the nature of education in this field. The most important elements in this context are the definitions of (a) the disciplinary base of the field as involving that body of knowledge, both theoretical and applied, which focuses on human communication and its disorders; (b) the profession as involving the delivery of services to individuals with communication disorders; (c) designated areas of practice as specifically defined areas (currently speech-language pathology or audiology) in which professionals provide clinical services; and (d) speciality as expertise in a particular sub-area of a designated area of practice.

These concepts and definitions provide a framework for considering the objectives and content of educational programs and will be generally followed in this paper. One characteristic of this framework should be emphasized: taken as a whole, it is extremely broad in defining the areas of knowledge and concern encompassed in the field. It thus provides a basis for the design of graduate programs for students with diverse interests and goals, whether they wish to prepare for doing research and/or teaching in the discipline or even in some specialized area of the discipline (e.g., speech physiology, language development, psychoacoustics, an area of communication disorders, etc.), or some combination of these functions. Any discussion of graduate education must be based on a recognition of this breadth and of the necessity and legitimacy of great diversity in the objectives and content of graduate programs.

Flexibility and Change

An often-stated, but not always followed, principle is that graduate education programs (or all educational programs for that matter) should be characterized by flexibility and change. Obviously this does not imply total flexibility or constant change for down that road lies chaos. However, it is important that we not specify the desirable objectives and content of graduate education so as to severely limit the flexibility of educational institutions to adapt their programs to legitimate student objectives, to experiment with curricular design and sequencing, to incorporate innovative instructional approaches, and to change their programs in response to new knowledge, technological developments, changing emphases in service delivery, etc. Even for a given program objective, such as preparing students for entry into clinical practice, flexibility to adapt and change is crucial to maintaining and improving educational programs. As stated in the position paper on the single profession (1), "....one would neither expect rigid didactic uniformity among educational institutions, nor would graduating students be cast from a single conceptual mold."

Many in higher education are concerned with what they see as a reduction in their flexibility to determine what is taught and how it is taught and to change their educational programs. They often attribute this primarily to the increasing specificity and rigidity of certification, licensure, and accreditation standards of professional groups. There is no doubt that such standards significantly affect educational programs. As noted in one report of the professional self-study, there is a relationship between the specificity of our certification standards and the relative importance placed on subject matter areas in our educational programs. There also is no doubt that such standards should affect educational programs, at least at the basic professional level, since our responsibilities to the public consumers of our services require that we insure some level of uniformity in what professionals in this field know and do.

But there is another source for a perceived reduction in program flexibility and change that lies within educational institutions themselves. Albrecht (2) takes the position that little attention often is given to evaluating, revising, and updating design of graduate programs or the instructional approaches used in light of the changing needs for our graduates in society. He concludes that the rate of real effective innovation in graduate education is "shockingly low" and points out that the resistance to change is accentuated in a time of retrenchment in higher education. Yet, it is in such a time that it is most important to re-evaluate and refine our educational objectives in accord with changing expectations and new developments and to institute those changes in curriculum and instructional approaches that will increase the effectiveness and efficiency with which we meet those objectives. This need for continuing evaluation and change in our own field has been succinctly stated by Ringel (13).

Probably the best illustration of the need for change in all of our educational programs relates to the rapid development of information technology and its application to all fields. Computer, video, and other such technologies are having so great an impact in all areas of our lives that understanding of computers, for example, is now being considered as an essential element of a broad general education for all students. In our own field, the current and potential applications of such technologies will increasingly affect the way in which we provide clinical services, teach, and carry out research. Thus, the incorporation into our educational programs of content on these technologies and their applications is necessary to adequately prepare our students at all levels, regardless of their specific career goals. In addition, new instructional approaches based on such technologies will enhance the effectiveness and efficiency of our programs.

Regardless of the bases for a perceived lack of flexibility and change in educational programs, it is clear that in any discussions of the objectives and content of graduate education, the need for some level of uniformity in education, particularly at the professional entry level, and the need to provide for the flexibility necessary to allow changes and innovations so as to improve the quality of our educational programs must both be considered.

Continuum of Education

In considering the objectives and content of graduate education in the field, it must be recognized that graduate education is only one intermediate stage of a total educational process that prepares people to do something. Completion of a graduate program, at whatever degree level, does not complete the educational process. I am not referring solely to the concept of lifelong learning or the need for continuing education to keep current with new knowledge and developments. Those obviously are pertinent and necessary. However, I want to focus here on the notion that graduate education should not be expected to produce a person who is fully competent to function independently as a professional. We recognize this at the entry level to professional practice by the requirement of a Clinical Fellowship Year prior to certification as a clinical practitioner. It is being recognized in our field and in others by the trend toward one or more years of postdoctoral training prior to entering a research career. It is underlined by the results of the professional self-study survey of clinical competencies in which many of the skills are identified as having been obtained primarily on-the-job.

The point to be made is that we cannot and should not expect that a person completing a graduate program will have all of the specific skills and experiences that we might identify as needed for full professional functioning. Not only is such an expectation unrealistic without greatly extending the time of graduate education, but it also does not recognize that some skills can be developed most effectively and efficiently during later experiences in other environments than in a university graduate program. If this concept is valid, then the challenge in determining the objectives and content of graduate education is to identify those basic knowledges, skills and attitudes which can be provided best in a university program and which are fundamental to the further development of other competencies needed to function professionally.

General Objectives of Graduate Education

As indicated in preceding sections of this paper, the objectives of the total range of graduate education in this field are diverse, depending on the particular career goals of students and other factors. As a result, such objectives can be considered most effectively in relation to particular graduate programs. However, there are some general objectives that would appear to be common to all programs.

Considering graduate education broadly, it has been conceived (4) to perform five principle functions in relation to knowledge: acquisition, transmission, preservation, application, and refinement. It is recognized, of course, that not all of these functions are present in every graduate program nor does each field give the same emphasis to each function. In this regard, it should be noted that graduate programs have often been separated into those which are "research-oriented" and those which are "practice-oriented" (6), although other terms such as "academic" and "professional" also have been used (3). It is clear, however, that the purposes and requirements of these two types of programs have merged to the point where they are indistinguishable (6). In addition, as pointed out by a number of educators (3, 15), all graduate programs are professional or practice-oriented, since they are designed to prepare people for practicing a profession, whether it be one of service, teaching, or research. Thus, I believe it is desirable to consider variations in graduate programs in relation to particular goals to be met, without using strict classifications or labels, particularly since such labels often lead to unjustified perceptions and fruitless discussions about the relative importance, quality, and "scholarliness" of graduate programs. In addition, attempts to classify programs, by applying such labels or by too narrow a definition of objectives, tends to divert attention from some basic common goals.

Regardless of the diverse purposes which different graduate programs may be designed to meet and regardless of the degree title or level that is involved, there would appear to be four common general objectives of graduate education which can be stated as follows:

1) The graduates of our programs should have a grasp of a coherent and current body of knowledge about something. The exact nature, breadth and depth of that knowledge base will vary, of course, with the particular objectives and focus of the program.

2) The graduates of our programs should have developed the abilities and skills needed for them to add continuously to that body of knowledge; i.e., to learn new things, to evaluate them, and to integrate them appropriately within the knowledge base.

3) The graduates of our programs should have developed the abilities and skills to apply knowledge in doing something, whether it be providing clinical services, teaching, designing and carrying out research, or some combination of these functions.

4) The graduates of our programs should have the abilities and skills needed to develop new and variant applications of knowledge based on changes in the knowledge base itself and on new or different situations they encounter that go beyond their prior learning or experiences.

This set of general objectives emphasizes that our goal should not be focused just on the development of certain knowledges and of skills to apply that knowledge, but, more importantly, on the development of those intellectual abilities that will allow our graduates to expand, adapt, and innovate in regard to those knowledges and skills throughout their careers. I suspect that all of us would readily accept the importance of this concept. In fact, many may feel it is so obvious that it is not worth mentioning or discussing. However, I believe that this concept has important implications for the way in which we should design and carry out our graduate programs, implications which have not always been recognized or acted upon.

The basic question, of course, is what are those abilities that we need to develop so as to provide the basis for continuing professional and intellectual development and growth. I do not presume to have an answer to that question. However, I would like to propose that among such essential abilities are those that will prepare the student (a) to make pertinent observations, whether in the library, clinic, classroom, or laboratory, (b) to analyze and assess those observations in relation to existing knowledge and integrate them appropriately into the knowledge base, (c) to synthesize from our knowledge new concepts, relationships, techniques, theories, and hypotheses, and (d) to test and evaluate those new ideas and approaches. These skills of observation, analysis, integration, synthesis, application, and evaluation are those which usually are identified with the scientific method and, more generally, with approaches to problem solving. The importance of such basic skills has been discussed for many years in relation to education generally and specifically in relation to our field; see for example, Ringel, (12). Their importance in our field also is highlighted in such phrases as "evaluating assessment and screening tools," "self-evaluation," "integration of observations," "developing realistic prognostic judgments," and "generating research" which are found in statements identifying needed skills throughout the reports of the Professional Self-Study Project. Although they hopefully will have their roots in education at undergraduate, or even lower, levels, I propose that they need to be refined and reinforced at the graduate level, particularly their application in the content areas focused on in the graduate programs.

I believe it is important to carefully consider these basic common objectives and fundamental intellectual skills in designing our graduate programs, particularly as the rapid expansion of our information base and the need for a wider variety of skills forces us to face increasingly harder choices about what is to be included in our graduate programs, how those courses and experiences are to be organized, and the instructional approaches which are to be used. As Ringel (13) points out, we generally have approached modification and improvement of the process for preparing the future worker in our field through the development of "long lists of academic courses and professional experiences in which students should be engaged" and proposing examinations or other methods of evaluating our graduates, an approach which he questions. This is particularly the case when the general inertia characterizing most program curricula results in simply adding on courses or other experiences to respond to new needs or pressures, and increasingly dividing and subdividing courses and experiences on the basis of narrow faculty specialities, types and sub-types of communication disorders, age of clients, setting in which the experience is obtained, etc. Such an approach, which is characteristic of many fields besides ours, tends to lead to unjustifiable fragmentation and compartmentilization of knowledge and skills, with the result that an understanding of the interrelationships among areas and of the fact that there are principles, approaches, and skills that are generalizable across areas gets lost in the process. I propose that in considering what graduate education in our field should be, we, using a popular phrase in education, "get back to basics." This does not mean that we should include only basic and general areas of knowledge and experiences. It does mean that, in considering the development, evaluation, and modification of the courses we offer, the experiences we give, and the instructional approaches we use, we should start by looking at how they relate to the most basic purposes of graduate education. I believe that the four general objectives and the intellectual skills associated with them that were described previously form at least a portion of the base from which our more specific objectives and curricula should be derived. In other terms, I believe that, regardless of other objectives we may wish to pose, we need to constantly evaluate our curriculum and approaches in relation to how they contribute to, or detract from, the development of a coherent body of knowledge, of an understanding of the interrelationships and generalizability of knowledges and skills, and of the basic intellectual skills of observation, analysis, integration, synthesis, application and evaluation.

Summary of Basic Consideration

I have attempted thus far to provide a discussion of some basic concepts which I feel relate to the consideration of graduate education in this field. The four concepts to be derived from this discussion can be summarized as follows:

1) The breadth of our field will and should result in a diversity of program objectives and curricula.

2) Flexibility and change are important characteristics of all graduate programs.

3) Graduate education should be viewed as only an interim stage of a total continuum of education.

4) There are certain general purposes and a set of intellectual skills that are common to all graduate programs.

These general concepts should be kept in mind and applied to our consideration of specific issues related to the objectives and content of graduate education in our field.

Because of the breadth of our field and the potential diversity of program objectives, it is difficult and probably meaningless to discuss more specific objectives and content without dividing the range of graduate programs into some narrower categories. For purposes of discussion, I will assume that our current educational patterns in relation to degree levels and other factors will continue, although that general issue also might be discussed. On the basis of existing patterns, the discussion will be approached in regard to three general types of programs: (a) those designed to prepare students for entry into professional practice, assumed to be at the master's degree level; (b) master's degree programs with other objectives; and (c) doctoral programs.

Professional-Entry-Level Programs

Before discussing objectives and content of graduate programs designed to prepare persons for entry into clinical practice, some general assumptions and issues should be noted. First, as indicated above, it is assumed for the purposes of this discussion that entry into professional practice will continue to involve formal preparation at the master's degree level or equivalent. Second, it is assumed that, consistent with the current situation, completion of such a program will represent a "terminal" academic degree for most persons. However, this does not mean that we should exclude from those programs experiences and instructional approaches that will facilitate and encourage students to pursue further graduate study.

A third general issue relates to the scope and focus of entry-level graduate programs. It is assumed that our goal will be to prepare students as "general practitioners" and, consistent with the Position Paper on the Single Profession (1), that such preparation will be focused on entry into a specific designated area of practice (currently speech-language pathology or audiology). These assumptions imply that, although there may be some core elements that are common to all areas, there will be different curricular tracks for each designated area of practice. They also imply that, although it may be possible and desirable to design curricula with enough flexibility to allow students to pursue special interests or goals in somewhat more depth or to meet special requirements (e.g., state certification requirements for working in the schools), there will not be separate tracks preparing them to specialize within their designated area of practice according to type of communication disorder, ages of clients, practice setting, etc. The issue of whether there should be some such specialization is one that might be discussed further. However, our inability to predict or control the contexts in which our graduates will practice, coupled with the goal of providing them with flexibility in selecting from opportunities in a broad variety of contexts, suggests that programs at the entry level should focus primarily on adequately preparing individuals for general practice in a specific designated area of practice. We should not compromise the achievement of this goal by providing a variety of specialized tracks at the master's level.

A fourth general issue relates to student selection for professional-entry-level graduate programs. One basic aspect is the undergraduate background of students. The Highland Park Conference participants supported the concept that, in the selection of students for graduate education in this field, "....the amount and type of preparation in speech and hearing subjects should remain unspecified" but that students without such preparation "....would be expected to complete those courses prerequisite to graduate study in the field" (8, p. 83). I suspect that most persons would still support this concept as a general philosophical proposition related to graduate student selection, since it encourages the attraction of highly-qualified students regardless of their undergraduate field of study and, even for those with undergraduate majors in the field, facilitates student entry into a graduate program at an institution other than the one in which they did their undergraduate work. However, there are a number of factors which will make it increasingly difficult to achieve these goals. Among those factors are the following: (a) expansion, in both breadth and depth, of the disciplinary base at the undergraduate level, making it more difficult for a person without an undergraduate major in the field to meet prerequisites for a professional-entry-level program within a reasonable time period; (b) marked differences among institutions in the nature of the undergraduate major; (c) the increasing scope and diversity of the functioning of professionals in the field, which leads to a more concentrated and structured graduate program that is less easily adaptable to varying student backgrounds; and

(d) concerns about the costs of preparing persons for entry into professional practice and about the efficient use of increasingly limited resources in educational institutions. These and other factors may continue to move many institutions toward requiring not only an undergraduate major in the field for admission to a professional entry-level graduate program, but also a major that tends to match its own undergraduate program. We may move increasingly toward an educational model that involves a student wishing to prepare for entry into professional practice moving through a continuous 5-6 year program in the same institution, a program that culminates in a master's degree and that is integrated and structured across undergraduate and graduate levels. Such a model has advantages for both the students and the program in relation to the efficient use of time and resources. However, it also has a number of disadvantages, including loss of benefits deriving from student exposure to various concepts and approaches of programs in different educational institutions. Undoubtedly, programs will come to different decisions about this matter and will continue to vary in what they require as prerequisite undergraduate background. Regardless of what individual programs may require, I hope that we will maintain sufficient overall flexibility to provide opportunities for persons with undergraduate preparation in other disciplines to enter our programs and for movement of students among institutions between their undergraduate and graduate work.

In addition to the nature of undergraduate background, there are other factors related to selection of students. The Highland Park Conference participants identified important qualifications as falling into the categories of "scholarship, aptitude, and personality" (8,p.84). Undoubtedly, most programs rely primarily on measures of academic performance and aptitude, such as undergraduate GPA, GRE scores, etc., although information on personal and other characteristics of applicants, derived from letters of recommendation or personal observation, may also be considered. It can be argued that since we are preparing persons for entry into a profession that provides services to people, personality characteristics, interpersonal skills, etc., should receive greater consideration. Although there have been some studies related to such characteristics in our field (10, 14), the general lack of definitive information on which characteristics, if any, are important and the difficulty in reliably assessing them would appear to make selection decisions that are based heavily on such characteristics difficult to justify. Of course, some of the same concerns can be raised about the ways in which we assess scholarship and academic aptitude and how they predict student performance within the graduate program or as a practicing professional. The topic of selection criteria and their relative importance is one that conference participants may wish to discuss. However, it appears likely that, although statements concerning general categories of criteria might be made, overall judgments about the desirable qualifications of students will be based on a mix of criteria that varies among institutions, depending on their past experiences and the particular nature of their program.

Objectives

As Ringel (13) notes, determining the objectives of our programs involves the question of what we want our students to "know and do". The general answer to this question for professional-entry-level graduate programs is that we want the student upon graduation to have developed those knowledges and skills that are necessary for them to become and remain competent in delivering clinical services in their designated area of practice. Two aspects of this statement should be noted. First, it is stated as a "terminal" objective to which all education up to that point, both undergraduate and graduate, should contribute; it is not a goal to be achieved soley by the graduate program. Second, the emphasis in this statement is on preparation necessary for persons to *become* and *remain* competent professionals. This emphasis is based on the notion discussed previously of graduate education being only an intermediate part of a whole continuum of education, not the end of the preparation process. In this regard, I believe that the nature of the CFY year and its function in preparation of persons for entering full professional practice must continue to be defined and developed.

In relation to the general goal stated above, the objectives to be achieved by the end of a professional-entry-level master's program might be stated as follows:

1) The graduate should understand the basic processes of human communication. Such an understanding presupposes a foundation of knowledge in the physical, social and cognitive sciences which form the broad scientific bases of the field (1).

2) The graduate should understand the nature of disorders of human communication, with particular emphasis on those related to the graduate's designated area of practice.

3) The graduate should understand the basic principles underlying the assessment, treatment, and prevention of those disorders.

4) The graduate should have the ability to apply those principles to the assessment and treatment of communication disorders; i.e., have developed clinical skills.

5) The graduate should have developed those intellectual skills that will foster the continued assessment, expansion, and adaptation of knowledges and skills.

Obviously, such statements of objectives are general and do not indicate the breadth or depth of knowledge desired or the specific skills which should be developed. However, it is beyond the scope of this paper, and of this author's knowledge, to attempt to inventory and evaluate all of the possible specific objectives that might be proposed. In addition, there may be dangers in being too specific in defining objectives. For example, a list of 38 clinical skills was developed for the competency surveys conducted in the Professional Self-Study Project and even these could be broken down further; e.g., skills in applying a particular instrument to assess persons with language disorders. We might agree that all or most of these skills potentially are important for general clinical practice and that they may help us to specify some of the objectives of our professional-entry-level programs. However, a number of points should be noted. First, a list of skills or aspects of knowledge that is too specific tends to obscure the fact that many of them are based on general and common knowledges, skills, and principles and thus may promote unjustifiable fragmentation of the educational process. Second, we should recognize that, although such specific skills may be needed for general professional practice, it probably is impractical to think that they all can or should be developed in the graduate program, particularly if this implies that the student must have had specific practicum experiences with a variety of special populations in order to develop certain skills. Thus, in formulating our particular objectives for a given program, it would appear desirable to avoid undue specificity and to focus on the development of those knowledges and skills which will form the base for development of other needed skills after graduation.

Content

Although the content of graduate education was included in my assigned topic, I do not intend to deal with it in any detail. Instead, I will try to outline some general considerations related to program content as a basis for conference discussions.

Obviously, the general nature of curricula of professional-entry-level graduate programs will be defined in relation to the five general objectives listed above. If it is assumed that the student will enter the graduate program with an understanding of the basic processes of human communication, based on a foundation of knowledge in the physical, social and cognitive sciences, and possibly some general understanding of the nature of communication disorders, the content of graduate work will be focused on courses and experiences that further develop knowledge of the disorders, that lead to an understanding of principles underlying the assessment, treatment, and prevention of those disorders, and that develop clinical skills. The curricular content and its organization also will be shaped by the notions discussed previously: curricular tracks will diverge at some point for different designated areas of practice but, within those areas, the content will be focused on preparation for general practice with little if any specialization by disorder, employment environment, age of clients, etc. Within this general framework, I believe it is important for programs to have the flexibility to determine curricular content and approach in accord with their particular philosophies, priorities and resources. As discussed previously, the profession does have some responsibility to develop minimal standards that relate to professional preparation, particularly at the entry level, such as we have established through our clinical certification and ETB accreditation requirements. Unlike some in the field, I do not think the requirements of our standards programs have become so specific as to severely limit curricular flexibility and innovation. However, there is a tendency toward making them more and more specific, particularly in regard to distribution and sequencing of clinical practicum; e.g., consider the number and specificity of the ETB minimal requirements in the practicum area as compared to those in other program areas. I believe that such increasing specificity will prove to be detrimental to maintaining the flexibility necessary for further development of our educational programs and should be avoided if at all possible.

There are some general principles which should be taken into account in determining the content and sequencing of the curriculum, principles which apply to all educational programs not just professional-entry-level programs. First, the content of both courses and practicum experiences should be defined in relation to learning objectives to be achieved. The focus should not be on the courses and practicum experiences to be completed but upon what is to be learned and on assessment of whether it has been learned (13). We should not equate hours in the classroom, laboratory, or clinic with learning. For example, clinical practicum experiences to be included in a program must be justified by how they are expected to contribute to the development and refinement of general or specific knowledges and skills, rather than by the need to achieve a specified number of clock hours of experience distributed by type of disorder, age of client, clinical setting, etc. Focusing on learning objectives rather than courses and experiences will facilitate adaptation of specific requirements to the background, strengths, and weaknesses of particular students, may lead to re-evaluation of our curriculum and instructional approaches and may stimulate experimentation with new educational models for more effectively achieving those objectives.

A second general principle relates to the need for integration in the curriculum. As discussed previously, when any field expands its areas of concern and individuals in it, particularly program faculty, become more specialized, increasing attention must be given to integrating collections of disparate courses and experiences into a cohesive curriculum that emphasizes interrelationships among areas and the generalization of concepts and approaches across areas. To achieve this, we should give particular attention to integration between the study of the normal and disordered processes of human communication, between our courses and those from related fields, among courses and experiences dealing with different types of communication disorders, and among course, laboratory, and practicum experiences. The methods used to achieve such integration will vary depending on the philosophies of the program and the characteristics of the particular faculty; however, the organization of content into larger units, team teaching involving faculty with different expertise, joint participation of all faculty and students in seminars, clinical staffings, etc., and appropriate and close coordination of course and practicum experiences are approaches that may facilitate curriculum integration.

A closely related issue is that of appropriate sequencing. A resolution from the Highland Park Conference stated that the basic core of professional preparation should be "temporally continuous" and that "both academic and clinical skills should be presented in an orderly, uninterrupted, logically sequential set of experiences leading from fundamental principle to practice" (8,p.89). Undoubtedly, we would continue to accept this statement as an important educational principle. It emphasizes that skills are developed over time and through a progression of learning experiences that build on previous learning. With particular reference to the development of clinical skills, this principle implies that such development should extend essentially throughout the program rather than being concentrated in a short time period and that it should begin with the development of more general skills, should proceed to learning to apply those skills with more specific types of disorders and in different populations, and should involve increasingly broader and more independent functioning of the student. The nature and sequencing of didactic courses, laboratory experiences, clinical observations and clinical practicum experiences should be determined in accord with this general principle.

In addition to the general considerations discussed above, there are two specific issues related to program content that will be mentioned. The first relates to the general area which has been labeled "professional issues and management" (7). It would include content on topics related to professional functioning, such as professional ethics, certification and licensure, personnel selection and management, cost-accounting and budgeting, legislative and legal issues, public relations, various service delivery systems and professional settings, etc. This general area was identified as an important professional training need by the regional study groups in the Professional Self-Study Project and by a large number of the training program directors responding to the survey of Cunningham, et.al. (7). However, a majority of those survey respondents indicated that their programs did not offer specific content on most of these topics. Undoubtedly, all programs should provide content on such topics as professional ethics, certification and licensure which are fundamental to any professional practice and which are specifically identified in ETB accreditation standards. In addition, an exposure to professional issues and some understanding of the special considerations involved in providing services in different settings (e.g., schools, hospitals, private practice, rural settings) are imporant in the development of a professional self-image, in stimulating involvement in professional matters, and in functioning in different service environments. Although some general introduction to these topics should be provided in a professional-entry-level graduate program, in-depth development of specific administrative skills, such as cost accounting, personnel management, etc., probably is not a feasible or justifiable objective, particularly if it consumes sufficient time and resources to significantly detract from development of the basic knowledge and skills needed to evaluate and treat communication disorders. Furthermore, many of these administrative skills may be developed more effectively through later experiences in settings where they are needed and through formal continuing education than in a university program. However, whether through a specific course such as that outlined by Cunningham, et.al. (7), informal seminars on professional issues, experiences in different practicum settings, or combinations of these, some general orientation to the area of professional issues and managment should be provided in the entry-level program as a base for continued learning and skill development.

The other specific content area which will be mentioned is that of research training. Although professional-entry-level programs will not be designed to prepare persons for research careers, it is clear that graduates need to be consumers of research information if they are to keep current and be able to adapt new knowledge to their clinical practice. How we develop them to be consumers is the topic of another paper at this conference and will not be focused on specifically here. However, there is another goal to be achieved in regard to research: to provide sufficient exposure to the nature of research endeavors so that students have a basis for determing whether they wish to pursue additional education leading to research careers. A basic question is whether the achievement of these goals requires experiences in actually carrying out research as part of a professional-entry-level program. It can be argued that such experiences are important not only in achieving these goals, but also represent a mechanism for developing the intellectual skills and scientific problem-solving approaches that form the basis for clinical practice as well as for research. The increasing breadth and depth of preparation that needs to be included in a professional-entry-level program and limitations on faculty time for supervision of research of large numbers of students undoubtedly has resulted in a decrease of thesis or other research project requirements in such programs. But even if completion of research projects is not generally required, programs should be flexible enough to allow and encourage students with research interests to carry out such projects. In addition, exposure to the research area can be achieved through such mechanisms as courses dealing with research issues and approaches, experiences as research assistants to faculty members, research seminars, journal clubs, etc. Of most importance in achieving our goals in this area, however, is that we emphasize the importance and nature of research in all of our courses, laboratory exercises and practicum experiences. Placing emphasis on gaps in our knowledge, posing hypotheses, questions, and theories and considering possible approaches to evaluating them, requiring the use of primary source materials, and requiring students not only to have certain information but to analyze, evaluate, and synthesize that information are instructional approaches that should pervade the total curriculum.

Summary

Although I have not attempted to deal with specific objectives and content of professional-entry-level programs, it is clear that, if current trends continue, such programs will tend to be highly structured and concentrated and will be focused on preparation of persons to function as general practitioners in their designated area of practice, with little opportunity for specialization by disorder or potential clinical setting. Responsibilities to the public requires that there be some degree of uniformity in the preparation of professional practitioners; however, it is important that there be sufficient flexibility within a given program to adapt to the background and needs of individual students and across programs so as to allow approaches that reflect differences in philosophy and resources and encourage innovation and experimentation in curriculum and instructional approaches.

Other Master's-Level Programs

Although the discussion will be brief, some attention should be given to master's level programs in the field for persons who do not wish to prepare for entry-level clinical practice. One category of persons may wish to prepare to work in the area of research. We generally have assumed that research careers will require doctorate training. However, the nature of our research enterprise is becoming such that positions requiring persons with some advanced education short of a doctoral degree and who are prepared to work in research programs in various capacities may become more prevalent. Second, there hopefully always will be individuals who wish to pursue some level of advanced work in the discipline of human communication and its disorders or some facet of that discipline in order to supplement a career in another field or with no particular career goals in mind. I hope that we will maintain the flexibility necessary to provide the opportunity for such alternate programs, even though this may not be the decision in all institutions. Finally, there will be individuals who pursue a master's degree in the process of doing doctoral work. This will be considered in relation to doctoral education. In any event, the objectives and content of such alternate master's programs necessarily will be dependent on the interests and goals of a particular student and thus should not be generally specified.

Doctoral Programs

I shall attempt to approach the topic of doctoral education in our field on a broad basis, without considering whether all of the objectives of doctoral programs should or can be encompassed within the traditional concepts of a given degree, such as the Ph.D., or whether there is a need to formally distinguish between programs on the basis of their specific objectives, since these questions are the topic of another conference paper. The primary questions to be focused upon here are the following: (a) What are the needs in the field that require persons with advanced education to the doctorate level? (b) Based on these needs, what are the objectives to be achieved within the range of available doctoral programs? (c) What should be the content and approaches used to meet those objectives?

Needs

Some of the major needs in the field that relate to defining the objectives and content of doctorate programs can be summarized under two general headings: clinical practice and research. However, it should be emphasized that these needs are interrelated and do not imply mutually exclusive objectives of doctoral programs.

The need for persons with advanced training beyond the professional-entry-level to provide clinical services has long been recognized. A resolution adopted at the Highland Park Conference stated that there should be programs "leading to degrees representing various levels of professional competence" (8, p. 87). Darley (9) presents a strong case for training at the doctoral level for full-time clinical service. The needs he saw at that time certainly have not decreased since. In fact, they probably have increased due to changing patterns of service delivery, changing roles of professionals from our field in delivering clinical services, administering service programs, etc., and the expansion of the scope of the field that results in an increased need and desire to specialize. It is possible, of course, that such needs will be addressed in part through a combination of professional experience and continuing education subsequent to preparation at the professional entry level, rather than through a formal program of study leading to a doctoral degree. However, doctoral study is one mechanism that should be available to provide advanced education related to meeting these clinical service needs.

In our field, as in all fields, the need to generate new knowledge through research is essentially limitless. Continuing advancement in the effectiveness of our professional services is dependent on an increased understanding of the normal and disordered communication processes and on the development and assessment of new approaches for evaluation, treatment, and prevention of communication disorders, for teaching students, for organizing service delivery mechanisms, etc. Some of the perceived research needs in our field are exemplified by those identified in the regional study groups of the Professional Self-Study Project and these only scratch the surface, particularly in the area of research on the basic communication processes. The continued training of new generations of scientists who have the knowledge and investigative skills needed to design and carry out both basic and applied research, is essential to the progress of our profession.

Objectives

It is clear that doctoral education in our field can not be a singly-focused entity but must vary in order to accommodate diverse student objectives in regard to both career goals and disciplinary specialization. Such needed variation is reflected in the resolution adopted at the Highland Park Conference (8, p. 86) stating that "programs of study at the doctoral level should reflect differences in the preparation for research and clinical objectives." In addition, it is generally accepted that doctoral programs should be highly specialized and planned in regard to individual student goals and interests (1, 5). Although such variations make it difficult to identify specific objectives that will be applicable to all doctoral programs, such objectives will relate generally to student career goals in clinical service, research, teaching, or a combination of these functions. But even such gross categorization of objectives should not be assumed to establish mutually exclusive bases for designing doctoral programs.

One problem relates to any strict differentiation between clinical and research objectives. As noted above, the Highland Park participants recognized that programs would differ in regard to these objectives. However, the conference report goes on to note that "....there can be no healthful dichotomy between scientific training and professional training at the doctoral level" (8, p. 33). Such a dichotomy not only ignores the commonalities of clinical and scientific functions (12), but it does not recognize the basic need in our field for clinically related research. The situation is summarized well by Darley (9, p. 147):

> The prospective clinician, probably better than anyone else, comes to a vivid realization of the inadequacy of our knowledge about the identity and the complex interaction of variables involved in aberrant communicative behavior. He is daily beset by questions whose answers are found in no textbook or journal. He is the ideal person to tackle one or more of these questions in a systematic way. The laboratory man won't answer them for him for he has no access to the material.

The message is clear. The doctoral student with primarily clinical objectives must not be insulated from research training. Realization of the goal of having "scientist-clinicians" in the field who, through their exposure to clinical problems, contribute to the generation of knowledge about both the normal and disordered communication processes and to the development of clinical applications of that knowledge is dependent on a combination of clinical and research training.

Similarly, we often have made unjustified distinctions between research in the speech, hearing, and language sciences and in speech/language pathology and audiology on the basis of a focus on the normal vs. the disordered communication processes. We should recall the definition of speech and hearing science offered by Peterson and Fairbanks (11) as the field focused on the scientific study of the speech and hearing processes, both normal and abnormal. Such a definition recognizes that research on normal or disordered communication processes can contribute greatly to our understanding of the other. In addition, this definition underlines the fact that, although there are some obvious differences, there also is a basic commonality in research approaches and techniques regardless of whether the research deals with the normal or disordered processes or whether it is conducted in a "laboratory" or in a "clinic." These considerations have obvious implications for the objectives and content of our doctoral programs. They argue against too strict a differentiation of research training on the basis of the type of process to be studied or the research approaches to be learned. This does not mean that all students must be trained as clinical practitioners, but it does imply the need for an exposure to the breadth of research problems in the field. Although we might disagree with some of the terms used, the general point is summarized in a resolution supported by a majority of participants at the Highland Park Conference, which stated that "all candidates for the doctorate be required to become familiar with both clinical and experimental laboratory problems but that the balance between these two kinds of experiences need not be equal" (8, p. 88). Exposure to different kinds of problems will not only broaden the base of knowledge and skills to be applied to a particular type of problem, but will facilitate the interaction and joint endeavors of persons with varying research interests and skills.

Specific mention also should be made of the objective of preparing persons for teaching careers in the field. As in most fields, we generally have considered this objective as secondary to, and possibly derived from, basic disciplinary education at the doctorate level. This undoubtedly is justified since teaching must be based on a firm education in the discipline and generally is coupled with clinical and/or research functions. However, as Spriestersbach points out, the teaching function "...is handled in most academic doctoral programs in only the most cursory of fashions" (15, p. 10). Because of this, any listing of the objectives of doctoral programs should include preparation for teaching as a separate element so that it will be specifically considered when determining the content of appropriate programs.

Thus, the particular objectives of doctoral education will vary with student career goals related to clinical practice, research, teaching or some combination of these and with student interests in focusing their doctoral programs on specific professional or disciplinary areas within the field. The problems related to making too strict a differentiation in objectives on the basis of career goals or area of specialization were discussed above. On the other hand, programs that attempt to "cover the waterfront" in the development of knowledges and of clinical, teaching, and research skills across broad areas of the field can fail to provide the depth needed to function effectively in any area. Thus, our doctoral programs must be designed to allow for in-depth specialization, while recognizing the interrelationships among, and the commonalities across, disciplinary areas and clinical, research, and teaching functions. I would propose that an objective which should be common to all doctoral programs is the development of a thorough understanding of the scientific process and of the knowledges and research skills needed to apply that process to the generation of new knowledge and of new applications of knowledge. This is not meant to minimize the importance of clinical or other objectives when appropriate to particular student goals, nor is it meant to imply that the extent or type of research training will be the same for all students. Instead, it is based on a recognition of the applicability of scientific training to other objectives, on the extensive needs for both basic and applied knowledge in the field, and on the traditional concept that a doctoral education, no matter what else it does, should develop the student's interests and capabilities for the generation of new knowledge, regardless of the nature of their primary career goals.

Students

The selection of students for our doctoral programs relate generally to the same considerations discussed previously in regard to professional-entry-level programs. In short, we want to attract the best and brightest students to all of our programs. However, there are some additional considerations in regard to doctoral programs.

Ringel (13) reviews research findings on the personality characteristics of gifted scientists which indicate that they are individualistic, open-minded, freedom-loving, highly motivated, fiercely independent, imaginative, nonconformist, and usually critical of the status quo in their fields of research. He suggests that the field would be well served if increased efforts were made to identify and recruit for research careers students who already demonstrate these characteristics. It is likely, of course, that such traits characterize highly successful persons in all areas, not just in research. Although these and other personality characteristics may be difficult to assess, they should be considered in the recruitment and selection of students. As Ringel also notes, it is even more important that our graduate programs encourage and reinforce such traits when they are demonstrated.

Another consideration relates to the background of our doctoral students. To a great extent, the appropriate background of education and experience will depend on the particular objectives to be pursued by a given student. For students with career goals in the areas of clinical practice or research in clinical areas, prior preparation at the professional-entry-level and possibly significant professional experience could be considered essential background for doctoral study. It is to be hoped, however, that our graduate programs do not become so rigid in their structure that they require a time sequence involving completion of a professional-entry-level program which is highly specified in order to meet professional standards, followed by a doctoral program. We should maintain the flexibility necessary to provide quaduate students who have initial goals for doctoral study with an integrated program leading from the bachelor's to the doctorate degree, which may or may not involve the award of a master's degree along the way. Such an integrated program can allow a sequencing of coursework, clinical practicum, and research experiences that may be more appropriate to achieving the student's eventual goals.

As discussed previously, we should be actively recruiting the best students into all of our graduate programs, regardless of their previous fields of study. For doctoral programs, particularly those focusing on research on the basic communication processes, both normal and disordered, majors in linguistics, physics, computer science, psychology, physiology or other fields may provide as good, or better, background as prior study in the discipline of human communication and its disorders. Not only should we maintain the flexibility necessary to accommodate those persons who wish to apply their background from other fields to the study of human communication, we should be actively recruiting such students.

Content

It should be noted that the general principles related to the integration and sequencing of program content and to instructional approaches which were discussed for professional-entry-level programs, also are relevant to doctoral programs. Even more than at other levels, however, the content of doctoral programs will depend on the diverse goals and specialization of individual students. Thus, the focus here will be on some general aspects related to doctoral program content.

One issue concerns the breadth and depth of knowledge to be developed. Doctoral programs often are conceived to involve an in-depth mastery of subject matter in a rather narrow area. As discussed previously, some focus on a special area of the field is necessary if the required depth of knowledge and skills is to be attained. However, achieving this goal generally requires a broadening and deepening of the knowledge base in other areas of the field and in other fields that are related to the students' special area of interest. Based on the results of the survey on the importance of various content areas in an ideal training program, a report of the Professional Self Study Project raises concerns about the narrowness of our perceived training needs, particularly in relation to content from other fields. Although these concerns are relevant to all levels of education in the field, they can be considered here in relation to doctoral study. It seems apparent that doctoral graduates should have a more firm knowledge base in related areas than they could be expected to have achieved in undergraduate or previous graduate work, even if we were to broaden our training at those levels. In addition to advanced education in areas of our own field (e.g., communication processes or disorders), additional work in such fields as mathematics, linguistics, psychology, health services administration, anatomy, physiology, education, business administration, physical sciences, social sciences, etc., that is relevant to the student's interests and goals should be included in the doctoral program. Education in our field, particularly at the doctoral level, needs to be truly interdisciplinary.

A second area of content relates to the development of knowledge and skills that represent the necessary and basic "tools" for carrying out clinical, research or teaching functions. Computer science, laboratory instrumentation, statistics, behavioral research methods, testing and measurement, etc. represent areas that are potentially important, depending on the particular goals of the student. The areas of computer and other information technology should again be emphasized as increasingly crucial fields of study in any doctoral program, since they have applications to clinical, teaching, and research endeavors in all disciplinary areas. In addition, an understanding of the history, philosophy and processes of science is importantly related to all functions in our field. Doctoral programs should include specific content, generally in other departments like Philosophy, dealing with basic theory and approaches related to scientific endeavors in the physical, social, and behavioral sciences.

A third content area of doctoral programs involves clinical experiences. The Highland Park Conference participants were rather evenly split on the question of whether it should be possible for a student to earn a Ph.D. degree without clinical practice (8, p. 88). Obviously, we will continue to have students in our programs who will not have qualifications for clinical practicum or career goals involving clinical practice. As mentioned previously, however, it can be argued that all students, even those with interests in "speech, hearing, and language sciences" should be exposed to clinical, as well as to laboratory problems, although such exposure does not imply actual clinical practicum experiences. For those students with goals involving clinical practice and/or research or teaching in clinical areas, additional practicum experiences would appear to be legitimate and important elements of a doctoral program of study. Darley (9) discusses the need for extensive and varied clinical experiences for persons pursuing doctoral education with the primary goal of clinical service. He notes that the type of clinical training he feels is needed may require extension of the time spent in doctoral programs and definitely requires large and diverse clinical populations within training program clinics or related facilities and faculty with extensive training, experience, and ongoing involvement in clinical work. Practicum experiences at the doctoral level generally will be designed to provide in-depth specialization with certain types of disorders or on work in specific types of clinical settings, although they also will provide an opportunity for broadening the students clinical exposure to disorder types.

A fourth area of content to be discussed is that of research experiences. Too often, the doctoral dissertation is considered to be the primary mechanism for providing such experiences. As with clinical skills, however, the development of research skills requires sequential experiences in posing questions and hypotheses, designing research to evaluate them, and carrying out that research, experiences which should extend throughout the doctoral program. Carrying out a variety of more limited research projects, possibly as part of courses or seminars, serving as assistants in ongoing faculty research programs, and similar activities are important elements in providing continuous development of research skills. The dissertation may be a vehicle for demonstrating the student's ability to analyze and snythesize information related to a specific problem and to conduct research, but it should be the capstone to research experiences not the beginning of them. It also should be noted that the dissertation, as traditionally conceived, may provide a misleading model for research activities, since its generally circumscribed nature in regard to both time and scope does not reflect the continuous and sequential nature of a program of research that leads from hypothesis to hypothesis toward the establishment of general concepts and models. It also is obvious that the types of research experiences envisioned require an environment in which there is extensive and ongoing research activities by program faculty as well as by students.

Another content area relates to teaching. One of the prime goals of doctoral education in essentially all fields has been to prepare the "academic professional" who will teach new generations of students. As noted previously, however, specific preparation related to the teaching function generally has been treated in the "most cursory of fashions" (15, p. 10) in most programs. Although many of the clinical and research skills to be developed also relate to teaching, it would seem important to include in the programs of students preparing for this role content dealing with general principles of education, methods of examination, modern instructional approaches and technologies, etc., particularly as these relate to the teaching of postsecondary students. In addition, as in the clinical and research areas, the development of teaching skills requires appropriate experiences in teaching. In our field these should involve not only supervised experiences related to classroom and laboratory instruction but, when appropriate to the student's area of preparation, experiences in clinical teaching (supervision). The continuing need to improve the educational process by adapting new instructional approaches to our field and by developing more effective models for classroom laboratory, and clinical teaching, requires that we give increased attention to the teaching function as part of doctoral programs.

Finally, it should be noted that the essence of quality doctoral education is not reflected in a list of courses or experiences to be completed. Instead, it involves educational approaches that encourage and stimulate critical thinking, free and open inquiry, and student-initiated learning (5). In addition, opportunities should be provided for continuous interchange about ideas, problems, and possible solutions to those problems among students and faculty through research seminars, clinical staffings, discussion groups and similar mechanisms. While such approaches are relevant at all educational levels, they are particularly important in the development of those knowledges and skills that we should expect in persons holding the doctorate degree in the field.

Summary

An atte[illegible] been made in this paper to identify and discuss some o[illegible]e issues and considerations related to graduate education in our field, both generally and in relation to particular categories of programs. It is clear that the diversity of our field and the resulting need to maintain flexibility in our programs make it meaningless to draw generalizations about specific objectives and content that should apply across all students and educational institutions. However, it is hoped that the preceding discussion of general issues, in conjunction with more specific information on clinical, research and training needs presented in the reports of the Professional Self-Study Project and with related conference papers, will provide the basis for conference discussions and recommendations concerning steps that should be taken toward the goal of improving graduate education and insuring that it is relevant to existing and projected future needs in the field.

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Perspectives on the topic question, "What is the need for a professional doctorate in communicative disorders?"

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I. Introduction

There is something inherently vexing about considering an issue or point of controversy which persists without resolution from generation to generation within a profession. Applying Alfred North Whitehead's (1933) definition of a profession, i.e. a group of persons disciplined by self-imposed ethical norms and trained to provide socially worthwhile services based on theoretical knowledge, we represent the third or fourth generation of a profession committed to improving the human condition by preventing, identifying, and ameliorating speech, language, and hearing disorders through applications of knowledge about human communication processes and their disorders -- and I daresay that each generation has considered, in some manner, the need for a professional doctorate. Most recently, at the 1963 Highland Park National Conference on Graduate Education in Speech Pathology and Audiology, the proposition that there should be another degree at a level comparable with the Ph.D. with emphasis on professional training was rejected by three-fourths of the participants but accepted by nearly one-fourth of those attending.

The ASHA Ad Hoc Advisory Committee on the National Self-Study has decided that now is the time for a fresh, objective look at this possibility, hopefully free from defensive reactions, laments about what might have been, or automatic rejection of the concept because it is not new or because it was not adopted in earlier times. The 1983 ASHA sponsored National Conference on Undergraduate, Graduate, and Continuing Education provides a forum for members of the profession to ponder the degree to which a professional doctorate in speech-language pathology and audiology is desirable, useful, or requisite for the 1980's and thereafter.

II. Context

It is helpful to be mindful of factors, internal and external to the profession, which impinge upon a consideration of the complex issue of the professional doctorate and which constitute the context for addressing the topic in 1983.

°degree structure The academic degree represents the broadest categorization of a student's achievement. Degrees also serve to describe in general terms the basic academic programs of higher education. In the United States the academic degree certifies past accomplishment while professional certification, such as the ASHA Certification of Clinical Competence, and government entitlement or license, such as a state license to practice in speech-language pathology and/or audiology, grant future rights of professional practice. At the present time the master's degree, commonly thought to be an intermediate degree between the bachelor's and the doctor's degree, is normally recognized as the first post-baccalaureate degree both in the arts and sciences and in many professional fields. Within speech-language pathology and audiology almost all master's degrees are granted in recognition for accomplishment within a post-baccalaureate program which encompasses the goal of preparing an individual for clinical practice, regardless of the degree designations (i.e. Master of Arts, Master of Science, or Master of Science in a named field). Ideally, degree structures should be flexible enough to facilitate a student finding a place in the system of higher education appropriate to his/her current interests and abilities. Some would argue that clinicians in our profession who hold the master's degree may not have access to a degree program which will have the clinical relevance they would wish (Madell, 1982). Both the formal definition and the practical reality of post-master's degree options must be weighed carefully.

The Council of Graduate Schools in the United States adopted a policy statement of the nature and naming of graduate and professional degree programs in 1969 in which the Doctor of Philosophy (Ph.D.) degree was defined as the:

> ". . . mark of highest achievement in preparation for creative scholarship and research, often in association with a career in teaching at a university or college. The Doctor of Philosophy shall be open as a research degree in all fields of learning, pure and applied." (n.p.)

Interpretation of the phrases "creative scholarship and research" and "all fields of learning, pure and applied" are fundamental to a consideration of the topic question. The scanning of any issue of Dissertation Abstracts provides clear evidence that the Ph.D. degree can now be earned in a rather remarkable range of attainments with the relative emphasis on "creative scholarship" and "research" difficult to discern. Shoben (1980) writes:

> "For example, Ph.D.'s have been and are now being awarded for the writing of a novel or the composing of a symphony, for the development of a training program for use by the military, for planning the reorganization of a major unit in the international

> division of a large corporation, for a 1-year introspective diary of the degree aspirant's response to poetry both while the candidate was sober and while the candidate's consciousness was altered by LSD, and for a daily log with commentary on the experiences involved in starting a children's psychoeducational clinic in a black neighborhood. The list, derived entirely from the country's major research-productive institutions, multiplies almost effortlessly. None of these projects appears valueless, but to call any of them "research" seems to me to stretch the meaning of the term considerably. All of them, however, impress me as entailing sufficient scholarship, if well and knowledgeably performed, to justify the award of a Ph.D." (p.881)

The Council of Graduate Schools also provided a definition for the professional doctorate:

> "The professional Doctor's degree should be the highest university award given in a particular field in recognition of completion of academic preparation for professional practice, e.g., the Doctor of Medicine (M.D.), Doctor of Dental Surgery (D.D.S.), Doctor of Veterinary Medicine (D.V.M.), Doctor of Theology (Th.D.), Doctor of Sacred Theology (S.T.D.), Doctor of Education (Ed.D.), Doctor of Business Administration (D.B.A.), Doctor of Engineering (D.Eng.), Doctor of Musical Arts (D.M.A.), Juris Doctor (J.D.), and a small number of others." (n.p.)

The proviso that the professional doctorate should be the "highest university award" reflective of "completion of academic preparation for professional practice" should be considered in view of the existing standards for professional practice in speech-language pathology and audiology -- standards now tied to the master's degree or its equivalent. Physicians, dentists, veterinarians, and lawyers are not permitted to practice with an academic degree less than the doctorate. Teachers, engineers, and musicians are not required to meet this stipulation.

Two newer professional degrees, not listed in the definition provided by the Council, frequently are mentioned during discussions of the possibility of a professional doctorate for our field. These are the doctorates in social work, the D.S.W. degree, and in clinical psychology, the Psy.D. degree. The doctorate is the general entry-level degree for professional practice in psychology but not for social work. It may be useful to note that the Psy.D. degree is now awarded by eighteen institutions, of which approximately one-half are proprietary schools (Caddy, 1981). Interestingly, a majority of proprietary schools offering a "professional" doctorate in psychology award the Ph.D. in Clinical Psychology rather than the Psy.D. degree.

As Peterson (1976) reported to a conference of the "Big Ten" conference of university programs in speech-language pathology and audiology considering the professional doctorate:

> "A group of practitioners on the West Coast formed the California Schools of Professional Psychology. These were conducted outside established universities, drew their faculties entirely from the ranks of practicing psychologists who taught for the schools on a part-time basis, and were economically dependent on tuition and fees provided by students. The curriculum was thoroughly professional, but paradoxically, the Ph.D. degree was retained as the highest graduate credential, largely because of student reluctance to take a chance on the uncertain prestige and legal status of the new Psy.D. degree." (p. 40)

The one program in our field promoting its doctoral offering as a practice-oriented professional doctorate, of which I am aware, (Columbia University) bears the Ed.D. designation. Since the Ed.D. degree from Columbia University has long held a unique position of higher regard within the Ed.D. degree category the use of that identity may be quite natural and advantageous at that institution for a "professional doctorate" in our field. It should be noted that the Ed.D. degree is granted at several other institutions for doctoral study in speech-language pathology and audiology but for programs of study with requirements akin to traditional Ph.D. degree programs in the field.

The third doctor's degree that the Council of Graduate Schools defined was the Doctor of Arts (D.A.). Their statement is as follows:

> "Preparation at the doctoral level for a career in the practice of undergraduate teaching, ordinarily in the fields of the humanities, or the social scienes, or the natural sciences, may be recognized by award of the degree of Doctor of Arts." (n.p.)

Only indirectly is the description of this third degree germane to this discussion, even though one institution offers the D.A. degree in Speech Pathology and Audiology (Adelphi University). The Doctor of Arts, although presented with a formal pronouncement from the Council, and recommended and promoted by the Carnegie Commission (Less Time, More Options, 1971), clearly has not become a widely used degree. It is now offered at twenty-four institutions (Dressel, 1982). Clark Kerr (1980), in his personal reflections on the work of the Carnegie Commission on Higher Education and the Carnegie Council on Policy Studies stated that both groups "overestimated the willingness of institutions of higher education and the federal government to entertain and undertake reforms such as the introduction of the Doctor of Arts degree." All proposals for new degrees face institutional inertia.

°nature of profession Few individuals in any field of endeavor would take exception to Whitehead's definition of a profession, cited earlier. And using Whitehead's authoritative characterization, few individuals in speech-language pathology and audiology would not consider a speech-language pathologist or audiologist as being part of a profession. Interestingly, the debate over the one profession-two profession issue and associated credentialing, has been just that, namely a debate over whether or not speech-language pathology and audiology share the same profession. Largely it has been assumed that there is little need to focus on the criteria or justification for being considered professional.

Whitehead's definition of a profession emerges from the tradition of the learned occupations, i.e., medicine, theology, and law (Spurr, 1970). Their model of the practitioner-scientist has become the pattern for newer professional fields. Schoben (1980) cautioned that although the practitioner-scientist model "enjoys full legitimacy" it may not be the only appropriate model for professions, new and established. He advises:

> "One alternative is that of the scholarly practitioner -- one who concentrates on the clinical crafts and on the personal resources and sensitivities that are the inescapable tools of this or her calling but who can also read the research literature, understand the intellectual as well as the personal and purely professional determinants of clinical effectiveness, and keep abreast of the best that is being thought and said about his or her professional functioning." (p.880)

A parallel to the contrast of the practitioner-scientist and the scholarly practitioner was recently presented for our field by Fred Minifie (1982):

> "I submit to you that the destiny of the field of speech-language pathology and audiology is intimately tied to practitioners assuming a greater role in developing the clinical science. Actually we need two types of people -- clinical scientist and scientific clinician. That distinction is meaningful to me. If we continue to condone the philosophic and pragmatic separation between clinical and research programs, we will surely destine the future services of our profession to a level of mediocrity, heretofore unknown in our country. We will simply not keep pace with technological advances in related fields." (p. 46) underlining added

Arguments, that cite a scientist versus clinician conflict and presented by proponents of a professional degree in psychology under the egis of a doctoral degree separate from the Ph.D., have been recounted by many proposing a professional doctorate in our field. Differences in the historical development of speech-language pathology/audiology and clinical psychology may mitigate against extending similar arguments to our field. As Minifie (1982) states:

> "The essential point is that the founding fathers of this profession were deeply committed to research and to the development of an adequate scientific base upon which to structure a professional discipline." (p. 44) underlining added

Adler (1972) in an article titled, "Will the Ph.D. be the death of professional psychology?" traced the emergence of the profession of clinical psychology. He wrote that following World War II at the urging of the government and non-university forces that ". . . the preparation of applied psychologists (as opposed to researchers) has been undertaken by universities with varying degrees of reluctance or responsibility as a by-product of scholarly and research training." Adler continued his argument on behalf of separate identity for the clinical training professional degree programs, "It is vital to keep in mind that applied psychological training was originally and still remains only a by-product of a system clearly tailored to produce a very different product." The heritage of speech-language pathology and audiology is quite different.

From their earliest efforts scholars and researchers in our field have fostered a climate of true enthusiasm within training programs for clinical inquiry and endeavor. A dual premise has been that service goals cannot be met without input from science, also much knowledge cannot be developed without sophistication in the applied areas. Knowledge of human communication processes has been considered basic to knowledge of disordered communication and clinical management. From the beginning, professionals in speech-language pathology and audiology developed a research base. This tradition continues, as reported by Ringel (1982):

> "In our own field, we may note that for the years 1980 and 1981, of the 184 members of ASHA who authored (or co-authored) articles in the Journal of Speech and Hearing Research 152 (83%) were holders of a Certificate of Clinical Competence. To the degree that the CCC is at a minimum a symbol of clinical interest and signifies the member's successful completion of clinically oriented coursework and practicum, we can see that an overwhelming proportion of what we publish in our research periodical is written by those with clinical interest and/or background." (p. 11)

At the same time within speech-language pathology and audiology training programs, students and faculty alike had the option to experience a sense of significant professional identity. The relatively recent emergence of our field stemmed in part as a result of the infusion of flexibility within American universities. This allowed new fields such as ours to overcome and avoid such classic conflicts as "basic versus applied," "pure versus hybrid," "experimental versus clinical," or "scientist versus practitioner." Rothenberg and Matulef (1969) in a Special Report from the National Council on Graduate Education in Psychology described the most serious problem in professional training in psychology as follows:

> "The atmosphere of many departments is openly disparaging of professional practice. Negative attitudes are communicated, and instructors, experimental and academic-clinical alike, are often inexperienced and untrained in the areas in which the majority of their students will soon be practicing. In short, the wrong people are training our professionally oriented students." (p. 34)

Contrast this with the information provided by Muma, Mann, and Trenholm (1976) about the proportion of faculty in speech-language pathology and audiology training programs throughout the nation who hold the ASHA Certificate of Clinical Competence, clearly a tangible sign of clinical perspective in research and teaching. They reported that 85% of all faculty hold ASHA-CCC. Of the people likely to have greatest influence on doctoral level students, 94% of full professors and 90% of associate professors held the CCC. Preliminary analysis of the Professional Self-Study Project: Research Survey Report indicates that similar patterns are continuing in the field (Ringel, 1982).

°the professionals The exact size and make-up of the group of individuals that comprise the profession we represent is not known. ASHA, one professional association in this field, has the largest membership. Estimates vary on the ASHA membership as a proportion of all individuals who consider themselves to be speech-language pathologists and audiologists -- from 45% to 65%. Rhonda Work (1982), former ASHA legislative councilor and vice president recently provided the following description of the profession based upon the 1982 Association Annual Report and a 1980 AHSA journal report:

> "In June, 1982, the American Speech-Language-Hearing Association reported a total membership of just over 36,000 as of December 31, 1981. Of the total membership, 85.8% was engaged in clinical practice and, according to the report, 'the highest proportion of ASHA members works in the elementary or secondary schools, including schools and classes for the deaf.' Although figures were not presented for this latter category, it may be safe to assume that we are speaking

> of 45-50% of the membership being employed in the schools. This is based on data from 1980 which indicated that 44% of the membership was employed in a school setting while 1% was engaged in research. Additionally, the 1982 report stated that 89.2% of the members held a master's degree and 3.5% a doctoral degree as the highest academic degree earned.
>
> None of these figures account for the 20,000 to 30,000 speech-language pathologists and audiologists who are not members of the national Association. These individuals more than likely parallel the profile described above, except that the number of master's degree trained persons may be less. This data would suggest that we are looking at a professional workforce in which the majority of individuals are trained at the master's degee level, are employed in a school setting and are actively engaged in the clinical practice of speech-language pathology or audiology." (p. 7)

The attitude of the general membership of the profession toward a professional doctorate is not known. The recent ASHA self-study surveys did not address this question. An interesting and argumentative speculation about a possible negative reaction from master's level clinicians to the concept of a professional doctorate was provided recently by Mary Lovey Wood (1982):

> "Master's level clinicians and researchers who have achieved professional status and recognition of minimum competence often worry that the discussion of a professional doctorate forebodes the future. They can almost feel the disdain of the clinician who acquires a professional doctorate. Once again, they may need to DO MORE to be professionally competent." (p. 10)

°Ph.D. as professional doctorate Stephen Spurr was dean of the Horace H. Rackham School of Graduate Studies at the University of Michigan when at the request of the Carnegie Commission on Higher Education he made an extensive investigation of and analysis of origins and uses of academic degrees in American higher education. Spurr's (1970) critique of the American Ph.D. degree and his recommendations concerning its utility merit careful reading:

> "The American Ph.D. program is broad enough to build into it the necessary elements to make it suitable for the preparation of teachers and professionals as well as of research scholars. To a considerable extent, we are already doing this. Many departments are now requiring supervised teaching experience for all their doctoral students and this is all to the good. If formal

> courses in education are thought desirable, the department has the option of requiring students to take them. A department has the right to broaden the concept of the dissertation to include expository as well as research treatments of a topic, as Dartmouth has done in the field of mathematics. An English department can accept dissertations whose merits lie in the evidence of the creativity they contain as well as in the more conventional trappings of scholarship.
>
> In short, there is not reason why the Ph.D. cannot be offered as a three- to four-year program suitable for turning out research workers, teachers, and professionals. The only question is whether the faculties of the individual departments will face up to the multivariate careers of the products of their doctoral programs and build in the necessary flexibility. Parallel doctoral programs with other names are created only to circumvent the nostalgic purists.
>
> The Doctor of Philosophy degree has evolved in the United States until today it identifies the generic program at the highest level of formal training for a career in scholarly research, teaching, and related professional fields. We see much to commend the use of the single degree title to encompass closely related programs for students who are not certain of their career goals and who may end up in quite different activities than they earlier envisaged. There is no need for a single pattern of competence at a given degree level. Instead, there should be a number of identifiable patterns with the educational content determined in each instance by the relevant social and occupational needs. Only the one title, Doctor of Philosophy, is needed. The name of the degree should not be expected in itself to reveal the exact nature and quality of the work done by the individual. Only a detailed study of his transcript, his dissertation, and the faculty's recommendations can really show how well the new Ph.D. has performed and how well he can be expected to perform in a particular employment situation." (p. 137)

Very likely anyone advocating the need for the professional doctorate in speech-language pathology and audiology would be delighted with Shoben's (1980) definition of the "scholarly practitioner" quoted earlier in this paper. It is akin to Minifie's (1982) call for "scientific clinicians." Interestingly, Shoben (a practicing clinical psychologist who also teaches at the California School of Professional Psychology) argues against the Doctor of Psychology (Psy. D.) degree designation and in favor of retaining the Ph.D. degree as the most appropriate credential for professional practice in psychology. It is his opinion that the Ph.D. degree is consistent with definitions and customs in the learned professions, that it readily encompasses the vision of a scholarly clinical practitioner, and that the Ph.D. has empirically proven itself to be suitable for professional service in psychology. Shoben (1980) contends:

> "Within the dynamic and always modulating tradition of the Ph.D., there is ample room -- at least until the case has been proved otherwise -- for us to make any changes that would benefit clinical psychology as a profession that derives its ongoing strength from theoretical knowledge and that offers increasingly valid and valuable services to a needful and responsive public." (p. 886)

Egon Brenner (1982) discussed the distinction between academic and professional degrees following a review of the various professional doctoral degrees in New York State which include thirty different designations, a high number for any state. He noted:

> "Today often the difference between the Ph.D. degree and the same professional degrees lies not in intent or in content but in the history and political structure of the university where the program is offered. What matters is whether or not a faculty was established to exercise collegial control over a range of programs all of which lead to the same degree designation or whether individual sub-groups of faculty professional schools and the like, have the power to set degree requirements and to recommend degrees. . . In a real sense all doctoral degrees are professional; certainly as far as the public is concerned all doctoral degrees - except in the medical fields - are the same." (p. 8)

Brenner placed greater emphasis on the influence of the perspective and interest of the faculty in such programs:

> "While I have not made a comprehensive survey I would claim that the breadth or narrowness of the degree designation but a function of the faculty which guided the student." (p. 8)

It is interesting to note that at the 1963 Highland Park National Conference on Graduate Education in Speech Pathology and Audiology the proposition that there is a need for training programs with scholarly and professional objectives and that the Ph.D. decree is sufficiently flexible to satisfy the needs of both of these training objectives was favored by 74% of the participants.

Another reason frequently given for the establishment of professional doctorate training programs or schools is that the research demands within the Ph.D. tradition are inappropriate and that it is not possible nor possibly desirable to accommodate for genuine clinical interests in these programs. The specific focus of concern has been on the nature of the doctoral dissertation. For example, when Stricker (1973) reviewed the professional school curricula developed in clinical psychology he reported that they were very similar to those in university programs leading to the award of the Ph.D. to students in clinical psychology. These professional programs all affirmed the need for a research component, with the qualifier that such research is focused on areas of clearest relationship to clinical practice. Stricker in his call for American universities to return to the flexibility associated with their early scholarship quoted in part from a 1945 Report of the American Council on Education:

> "It was not until the early twentieth century that the practice of awarding the Ph.D. degree and its establishment as an earned degree became somewhat standardized (in the United States). The early leaders in graduate education, such as Gilman, Hall, Eliot, White, Angell, and Harper, all advocated a program of research and instruction calculated to minister to the everyday needs of national and community life. They were not afraid of vocational, professional, or otherwise utilitarian studies."

There may be a need for some Ph.D. training programs to return to the broader definition of the Ph.D. provided by the Council of Graduate Schools with emphasis on "creative scholarship and research" and open to "all fields of learning, pure and applied" and to avoid adhering to empirical research as the sole approach to the doctoral dissertation.

From this perspective it is encouraging to summarize in general terms the nature of the 825 dissertations completed in speech-language pathology and audiology in the period 1970-1975 (Koenigsknecht, 1976). In addition to experimental studies there were those using exploratory research, group research, and nonempirical approaches. A range of clinical and naturalistic devices were evidenced as appropriate heuristic approaches.

The 825 dissertations completed in our field during this period were classified, based upon a reading of their summaries in Dissertation Abstracts, as either (a) obviously applied or clinical investigations, (b) nonclinical, basic science and normative studies, or (c) a third grouping for studies not so obviously classified. Thus, in this broad classification rather than list a study as definitely clinical or nonclinical when this was not immediately clear it was assigned to the unclassified category. Two-hundred and fifty-two or 30% of the dissertations were completed in audiology and 573 or 70% in speech-language pathology. Collectively, 437 or 53% of the dissertations reported applied or clinical investigations, 272 or 33% of the dissertations involved nonclinical, basic science-normative studies, and 116 or 14% represented overlap of clinical and non-clinical or were not easily classified in this general manner. The pattern held for both audiology and speech-language pathology. A breakdown of the 573 speech-language pathology dissertations was as follows: 55% were clinical, 30% were nonclinical, and 14% not so classified. For the 252 dissertations in audiology the breakdown was as follows: 48% were clinical, 38% were nonclinical, and 14% not so classified. Only seven universities granting the Ph.D. in our field during this period produced more nonclinical than clinical doctoral studies. For the seventeen universities each awarding twenty or more Ph.D. degrees in our field during this six-year period it is interesting to note that they not only accounted for 60% of all the dissertations but that although they produced 68% of all the nonclinical studies these same seventeen training programs accounted for 54% of all the clinical investigations. References to a lack of enthusiasm for clinical inquiry in the existing Ph.D. training programs in speech-language pathology and audiology as a basic argument for the professional doctorate are not supported by these findings. Instead, there is evidence of fairly universal acceptance of creative scholarship and research with a clinical orientation leading to the Ph.D. degree in speech-language pathology and audiology.

°destiny of alternative degrees In a published exchange of conflicting views between two professional clinical psychologists on the suitability of the Ph.D. degree as a professional degree focus was placed on the fortune of alternative doctorates in professions--other than the major, long established ones (Fox, 1980; Shoben, 1980). Shoben, who argued that professional psychologists can function quite comfortably as Ph.D.s, raised the question of "what can be inferred generally from the destiny that has awaited doctorates alternative to the Ph.D." His own answer was:

> "None of these efforts, often reasonably conceived and nobly motivated, seems to have produced anything other than second-class or highly restricted credentials in the academic and professional communities. Although the Ed.D. seems to have fared better than others, it is still looked upon askance in many quarters and carries little weight outside the context of school systems and colleges of education. The Doctor of Arts, about which I was once quite positively excited and to which I remain sympathetic, has essentially failed. It is no longer even being given in more than a small handful of institutions; and where it is offered at all, it has its tenuous roots in a very limited number of departmnts. Although the DSW's history is too brief to permit definitive conclusions, its primary

> value seems to be as a credential for administrative posts in social work agencies and for faculty positions in schools of social work." (page 884)

Shoben, who found no advantage in shifting from the Ph.D. to the Psy.D., in rather blunt language criticized the alternative Psy.D. degree. He said:

> "There are grounds for considering the Psy.D. a risk because it confers on its holders a restricted and restrictive credential that is not broadly recognized, and it carries the implication of a watered-down variant of a "real doctorate." To insist on it incurs the substantial hazard of unjustly making second-class citizens out of at least a generation or two of persons on whom it is forced. It also seems to me to run counter to the cultural momentum of our profession (as other alternative doctorates have unsuccessfully tried to do), and it invites violations without redeeming advantages of some of the best intellectual traditions within our profession. Once more Whitehead's conception of a profession and the ideal of the scholarly practitioner appear quite germane." (p.884)

Determination of the negotiability of any new academic or professional degrees that might be proposed for our field is of critical importance.

Fox (1980), while stating a case favoring the Psy.D. instead of the Ph.D. for clinical psychologists, also was pointedly negative in his descriptions of recent attempts at alternative doctorates:

> "Shoben correctly points out that the DSW and the EdD degrees enjoy little or no acceptability outside of their own professions and that a similar fate undoubtedly awaits the PsyD . . . Neither the DSW or the Ed.D. are awarded by professions that are at all comparable to psychology. They have few licensing laws, they have little acceptance in the public arena as independent providers, they have nothing approaching psychology's system of accreditation (although they do accredit), and they fail to meet many of the criteria for defining a profession. To argue that since the DSW or the Ed.D. failed to win wide public acceptance the Psy.D. must suffer the same fate ignores our extensive licensure and regulatory status, our recognition by a variety of third-party funding mechanisms, our unique historical development, and our foundations in a highly developed basic science. I fully agree with Shoben's assessment that the Psy.D. has yet to achieve the prestige and status that are currently attached to the M.D. or even the Ph.D. degree. The

> length of the journey, however, is not always the best justification for not starting; as the Chinese say, 'A voyage of a thousand miles begins with a single step.' If we truly have something to offer in the way of service, we can earn the esteem and respect of society. Shoben concluded, on the basis of the above arguments, that the Psy.D. risks being perceived as a watered down degree. I agree with Meehl (1971) that although the risk may be real, it is, at least potentially, preventable . . . Basically, the solutions amount to establishing and monitoring high standards for admission and graduation and insisting on a curriculum that is both thorough and demanding. Another solution is the adoption by the profession of the Psy.D. as the only degree for professional practice somewhat analogous to the change to a uniform J.D. degree for all law school graduates several years ago." (p. 888)

It would be daring to propose the concept of assuring the acceptance and survival of a non-Ph.D. professional doctorate in speech-language pathology and audiology by adopting it as the *only* degree for professional practice. Most advocates of the professional doctorate in our field have carefully proposed it in concert with the continued category of master's degree practitioners. Feldman (1981), for example, said:

> "In retrospect, it now seems that when taking what seemed to be a major leap forward by upgrading from a bachelor's to a master's degree, we should have taken an even bolder step. We should have moved to a professional doctorate as well as the master's degree for the patient care segment of the profession and preserved the Ph.D. for the research-oriented track." (p.944)

III. Call

Attention also should be directed to the reasons for their advocacy as given by those calling for a professional doctorate in speech-language pathology and audiology. Herein are presented a sample of the published statements (with extensive quotation because these publications are not widely circulated) recommending this course of action. These citations, although not all-inclusive, provide a representative canvass of the motives and justifications offered in favor of the professional doctorate. No attempt is made to affirm or refute the arguments. A call for further documentation for such views is added.

Realign emphasis Work (1982) proposed de-emphasizing research at the doctoral level in order to increase both management training and technological and transdisciplinary training, and to offer opportunities for individuals to pursue a doctorate more appropriate and fitting to the clinical setting. In her words:

> "By defining the professional doctorate as a "clinical" doctorate, we are much closer to the essence of the issue. A professional doctorate designed to offer increased opportunities for advanced clinical management training would differ from the research doctorate in that formal research would be de-emphasized, but not deleted from the program. Rather, the traditionally conceived "pure" research would be replaced to a large degree by "applied" research. It is important that we not lose this component of the program, for research is invaluable to the clinical process.
>
> Due to the research efforts of our colleagues and those from other professions, we have witnessed over the past two decades an explosion of information regarding communication and its disorders. Much of this knowledge has been translated into practical application for remediation and has come to us from the disciplines of speech-language pathology, audiology, linguistics, psycholinguistics, sociolinguistics, learning disabilities, speech science and reading, to name a few. A professional doctorate designed to encompass new knowledge and technology would serve well those individuals wishing to continue working in a clinical setting. A doctorate with a curriculum that would include transdisciplinary training would serve those individuals at the master's degree level who wish to expand their expertise without the requirements of a Ph.D.
>
> If, indeed, we are providing clinical services, it seems logical that we need to offer opportunities for individuals to pursue a doctoral level degree more appropriate and fitting to the clinical setting. Advanced training designed to enhance skills for direct services would provide an incentive for individuals to return to the clinical setting." (p. 7)

°go beyond minimum Wood's (1982) pro statements reflect a bias for extending clinical expertise beyond the minimal level of clinical competence protected by the master's degree. Importance was also placed upon the title "doctor:"

> "The unavailability of a professional doctorate limits the options of the clinicians who may not want to emphasize research, but want to expand their clinical expertise, increase their employability, and achieve higher professional status. We have determined only the minimal level of clinical competence, but we have not

> addressed a higher level of clinical competence. An advanced degree may make a clinician a more creditable professional in the eyes of the medical community as well as in the lay community. This is particularly true in private practice where one's formal credentials are the only initial entry into contracts and for referral sources. A doctorate degree can be particularly attractive for a female in private practice where the professional and lay community often are more willing to put initial trust in a woman who has a professional title (e.g. "Dr.") Formal training beyond mininal levels of competence usually results in greater clinical skills and professional maturity. These traits are desirable under any circumstances, but are particularly necessary at this time of information explosion within the profession." (p. 10)

°image and title   Feldman (1981) addressed the issue of the image of the profession, which in his opinion is indexed to the master's degree:

> "There can be no doubt that the academic degree [illegible] utilize as an index of clnical competence, the M.S. or M.A., acts as an Achilles heel when dealing with other health professions and the public. It may sound commercial and superficial, but it is a fact of life that the professional with the title doctor is far more negotiable than is the professional without that title. Further, our profession is clearly broad enough in scope to warrant a professional doctorate degree. The image may not matter that much in the schools, but when you are out there dealing with the public and other human service professionals, one is at a disadvantage without a doctorate. Our traditional identification with the lower paid nondoctorate professions is costly to us in many ways." (p. 944)

°clinical promotion   Higdon (1982), from the perspective of a clinic director found the concept of the professional doctorate intriguing:

> "From the perspective of a clinical director, it is preferable to enhance the reputation of a center by hiring clinically oriented personel, since their prime responsibility will be client care, not research or publications. The understanding of research methodology and resultant data, is essential and should continue to be an integral part of any professional doctoral program. Perhaps an alternative which redirects the focus to applied research and clinical client care would be beneficial.

> At present I'm aware of only one professional doctorate program in our field (Columbia University). Examples of successful functioning clinical programs not requiring tradition research dissertations may be found in medicine, dentistry, optometry and psychology. (p. 8)

Higdon also noted another possibility:

> "Assuming an increase in the number of doctoral level individuals in our direct service delivery system, it may result in improved third party reimbursement and legislative impact." (p. 8)

°economics Carnell (1982) considered the economic climate and advised that the professional doctorate should "concentrate on such topics as practice management, time management, and interprofessional cooperation:"

> "A professional doctorate in communicative disorders would strengthen the position of our profession in the market place. The academic doctorate, that is the Ph.D., has served us well in developing a strong academic background, a substantial research base and relative prominence in the allied health professions.
>
> The academic doctorate has not prepared us for the competitive economic climate and the decline in federal funding. Our profession is saddled with an image based on free service and an educational model. Neither of these identities will serve us well in the future.
>
> A professional doctorate will at once give us identity and a different thrust. . . . A clinical doctorate would be great benefit to those practitioners who prefer to be in private practice. It would give them an entre' that they do not currently possess. Even though my professional career has been primarily in a community speech and hearing center with some university teaching, some consulting and a smattering of private practice, I believe that our profession will only obtain its rightful place as more and more of our colleagues earn their livelihood in private practice.
>
> The emphasis of the professional doctorate should be based on a strong direct service model. It should concentrate on such topics as practice management, time management, and interprofessional cooperation." (p. 11)

°supervision and administration The need for advanced preparation of supervisors and administrators is commonly mentioned in discussions favoring the professional doctorate. Von Drach (1982) stated:

> "The degree of training provided by the doctoral level in Speech-Language Pathology and Audiology can be effectively utilized in the public schools in supervision and administration. . .
>
> The administrator and supervisor of Speech-Language Pathology and Audiology in the public schools may deal with general educational problems, not exclusively with sophisticated clinical skills. In order to enhance opportunities for success the interaction of professionals in all areas of special education must be thoroughly understood by the supervisor in addition to the role of the regular classroom teacher.
>
> The intricacies of budgeting and funding are of paramount importance. Time management skills are an essential pre-requisite for the supervisor in the operation of an effective program. Personnel management skills are considered to be of prime importance. (p. 12-13)

°reverse degree subversion Some advocating the professional doctorate have expressed concern about the subversion of the Ph.D. degree by "professionals." Moll (1976) touched on this issue in his review of the pros and cons of professional doctorate programs in this field when he noted that an:

> ". . . argument advanced for a professional doctorate degree in this field involves the manner in which we have accommodated the many individuals who wish to obtain additional educational experiences beyond the master's degree level that will more adequately prepare them to function as practitioners rather than as researchers. Although some such individuals may be content to obtain additional experiences without working toward a higher degree, this is not usually the case. Thus, we have attempted to meet their needs through the only advanced degree program presently available: the Ph.D. program. We have had to modify such programs to become more professional in nature while still maintaining enough elements of research training to justify the use of the Ph.D. designation. As a result, our Ph.D. programs have often been compromised to the point where they do not optimally meet the needs of individuals with professional goals nor those with research goals. This has resulted in a dilution of both types of educational experiences, in the awarding of a Ph.D. to individuals whose aptitudes and interests are not in research areas, and thus in a lack of consistency in what the Ph.D. means in regard to its meaning in other fields. This situation is exemplified by the fact that individuals from other professions with whom we relate now recognize that many persons with the Ph.D. degree in this field have not really been education in accord with the scholarly-research

> purposes of traditional Ph.D. programs. Thus, the Ph.D. degree designation is beginning to be almost meaningless in specifying that the holder has research aptitudes, interests and training. In this regard, it should be noted that proponents of professional doctorate degrees make no assumptions that the individuals who should follow such a program would have basic abilities which are inferior to those who should pursue Ph.D. degrees or that a professional doctorate program would be less demanding and rigorous. The important point that is made is that these two groups of individuals should have different qualifications and goals and different types of programs without making value judgments about whch is the more rigorous, requires more ability, etc." (p. 51-52)

°clinical essence Feldman (1981) placed stress on the essence of the profession as the delivery of service to persons with speech-language and hearing disorders. A proponent of the professional doctorate, he stated:

> "Science is essential to the life and growth of the profession. Human service providers must be trained in the scientific foundation of their profession. In addition, the development of new knowledge and improvement in clinical application cannot occur without a strong scientific effort. But that effort must not be confused with the essence of the profession itself. That essence is the delivery of service to persons with speech-language and hearing disorders.
> It is not my intention to denigrate the pursuit of academic endeavors. There will be no professionals tomorrow without those who dedicate themselves to the training of tomorrow's professional. But I reiterate, a large share of the training of tomorrow's clinicians should be provided by those who, themselves, excel in the provision of service. As one climbs the academic and administrative ladder, clinical activity must not diminish." (p. 945) underlining added

The intent of proponents of the professional doctorate is, without doubt, to advance the profession and its contributions to society. The commitment of skeptics and opponents of the professional doctorate within the field is, without doubt, the same. A neutral party, I believe, would observe that there is a remarkable innocence in the lack of presentation or analysis of evidence which ought to underpin statements of need, value, negotiability, likely funding, or projected impact of professional doctoral degree programs in speech-language pathology and audiology.

Ringel (1982) highlighted the import of such evidence:

"The argument presented in making the case for the professional doctorate is seldom, if ever, in the form of a direct attack on the importance in graduate training of a research experience *per se*. However, in the process of setting priorities for the use of a student's time and resources, the research experience is relegated to a less essential and thus expendable status, We are also told that the field of psychology in response to a similar dilemma has developed viable and well-accepted professional doctorate programs.

While this issue is quite complex, a simple version of a common theme is that the time devoted by a student to earning a doctorate is limited and it thus follows that academic priorities must be set and some program compromises made. Naturally those aspects of the traditional Ph.D. programs that most properly can be minimized or eliminated are the relatively less important. Finally, it is reluctantly concluded that for clinically oriented persons the relatively least critical part of the doctoral program and thus the most vulnerable to deletion, is the research experience. Now, clearly, the time a student can devote to a doctoral program is limited and there is much to do to prepare a first-rate clinician. I do, however, challenge the "expendable place" assigned to the research experience in this argument. As preparatory for challenging the argument, let me first attempt to restate its essential rationale. It is proposed that the essence of our profession is the delivery of service and that research effort "must not be confused with (this) essence" (Feldman, 1981). Further, those who propose the new doctoral porgram suggest that it meets a perceived professional need and thus we may infer a level of dissatisfaction by our current group of doctoral level clinicians with their own graduate education. Let us now consider these issues.

Because advocates of the professional doctorate program in our field have thus far provided no evidence to support their views and since the argument has been advanced that there are important similarities between our field and psychology, it is of importance to note a survey of academic clinical psychologists which studied their views on various graduate training models. Thenen and Ewing (1979) reported that the program of choice by 63% of respondents was one with *equal* emphasis on scientific and applied training -- only 7% supported an autonomous department of clinical psychology which awards a Psy.D. A second survey of Ph.D. trained clinical psychologists representing all types of employments including private practice found that 77% rated their training in "traditional" Ph.D. programs as slightly, quite or very satis-

> factory (Garfield and Kurtz, 1977). And, finally, a survey of clinical psychologists whose primary duties were direct patient contact were found to be relatively active in journal publications, books/chapter authoring, and paper/symposia and colloquia presentation (Bornstein and Wollersheim, 1978). Perry (1979), in interpreting this survey, concludes that "given the assumed primary job demands of this group, the amount of research activity is impressive and refutes the argument that those practicing the profession of psychology do not need research training because they do not do research." (p. 11-12)
>
> secondary sources are not shown in the attached reference list, see article

Much of the impetus for considering the professional doctorate for speech-language pathology and audiology appears to stem from concern within our profession about the quality of professional service offered by some in the field and concern about the thoroughness of preparation of these personnel. My reading of the Professional Self-Study Project Competencies Survey Report is that generally it could be cited to support a view that graduates of ASHA ABESPA-ETB accredited master's degree level clinical training programs are prepared to provide practitioner services that are a credit to the profession. The dramatic demand for clinical speech and hearing services which exist today did not evolve from mere public awareness of speech and hearing problems; it came from speech-language pathologists and audiologists experiencing positive results with the communicatively handicapped. Generally our clinical profession thus far has been remarkably successful in maintaining high standards while being responsive to the massive service needs of education and health. It is valid to ask if such continued accomplishment will depend upon the development of the professional doctorate in some form.

IV. Related Issues

The various calls for the professional doctorate in speech-language pathology and audiology and the context in which these views must be considered raise fundamental issues for discussion Related issues of consequence that will influence a final pro-con disposition toward the topic question also should be placed on the agenda.

°Is the professional doctorate an argument for specialization or generalization? --inclusive of the competencies expected of both speech-language pathologists and audiologists, as well as selected training in administration, management, supervision, technology, and applied research? --inclusive of a focus on advanced clinical knowledge, research, and practical skills in various areas of specialization?

°Is the professional doctorate to be an additional option for professional advancement at the post-master's level or a replacement of the Ph.D. for this purpose within allied health, education, and private practice service delivery systems for those individuals with communicative disorders?

°Does a professional doctorate apart from the Ph.D. in speech-language pathology and audiology imply the need for a professional (named) master's degree apart from the undifferentiated titles Master of Arts and Master of Science, with curricular modifications?

°Could objectives of the professional doctorate be met through changes in the nature and requirements for the Ph.D. in speech-language pathology and audiology? --does applied research and advanced innovation in clinical inquiry and practice fit under the rubric of the Ph.D.? --could adequate numbers of post-master's level clinical personnel with doctorates be provided by such programs?

°Would the development of a professional doctorate along with the continuance of the ASHA-CCC master's level practitioner connote dual-levels of competence for professionals in the field in the eyes of the public, third-party payers, or other professions? --even if current certification structures, state licensure regulations, or federal guidelines were not changed? --would those earning the professional doctorate need the Clinical Fellowship Year?

°What is the best organizational arrangement for the education of professional doctorates (with either the Ph.D. or the Doctor of field designation) in speech-language pathology and audiology (i.e. proprietory institutions, within traditional graduate schools, free-standing units of colleges and universities)? --what will be the disposition toward such involvements of those academic institutions generally identified with doctoral level education? --is there wide-spread dissatisfaction with the manner in which doctoral programs are currently designed?

°Will the mutual influence of clinicians and researchers upon each other be enhanced or reduced through the development of a professional doctorate in the field? --what will ensure the profession both practitioner scientists and scholarly practitioners (clinical scientists and scientific clinicians)?

°Overall, will the professional doctorate in speech-language pathology and audiology enhance our profession's capability to improve the human condition by better preventing, identifying, and ameliorating speech, language, and hearing disorders through application of knowledge about human communication processes and their disorders?

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V. Note

A summary of the key issues involved in a consideration of the need for a professional doctorate in communicative disorders, implications associated with various options, and recommendations will be presented at the National Conference.

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Issue IV. How should undergraduate and graduate education in speech-language pathology and audiology interface with other areas of University training?

Joel Stark

I have approached this discussion paper with apprehension and humility. Frankly, there are no easy answers with regard to the most appropriate undergraduate and graduate education and training models for professionals in our field. We always feel fortunate when we find a bright, sensitive and enthusiastic young student coming into our graduate program. We are even more fortunate if that student has had a solid undergraduate background with coursework in the natural, physical and social sciences as well as in the liberal arts.

Our training programs often make great and unrealistic demands upon our students. If we were to implement all of the recommendations of the ten regional study groups relative to training (July 1981), it would require either a very cursory survey of general and specific professional education or, a training program which would extend for many years beyond present programs. Yet it certainly would be ideal if all of us possessed the exhaustive list of competencies cited in these reports.

The interfacing of training in Speech Language Pathology and Audiology with other University training is intimately related to the first two issues regarding to the content and objectives of undergraduate and graduate training. However, we can start by examining the language of the issue. While Howard Mumford Jones chose Chemistry, Law and Medicine rather than Speech Language Pathology and Audiology, he wrote:

> We universally agree that chemistry is hard work, and we expect students to grind away at it, just as we expect them to grind away at engineering. We cannot afford to have prescriptions filled by druggists whose knowledge of pharmacy is as vague as their capacity to write English, just as we cannot afford to have bridges built by engineers whose mastery of stresses and strains in materials is as vague as their mastery of spelling. Preparation for vocation or profession is therefore hard and demanding. The medical student or the future lawyer is so wrapped up in his studies that we have a certain degree of pride in saying that John never leaves the medical school until six o'clock and Joe is in the law school library until ten. We admire and we deplore this rigor. We admire it because it keeps American technology on top of the world; we deplore it because it is narrowing, and at this point we invoke the arts as a medicine against narrowness. Students are encouraged to take courses in literature on the ground that if they don't read literary masterpieces now, they will never read them hereafter-one of the most curious arguments for art I have ever heard. And in general, courses in the humanities are called upon by planners of programs in professional education to undo the damage which plans of professional education have done. (From Reflections on Learning, New Brunswick, N.J: Rutgers University Press, 1958).

Hence, we would heartily concur with the first recommendation of the regional study groups that the "training of speech-language pathologists and audiologists should include a strong pre-professional education in the liberal arts". The notion of training, particularly professional training is abhorent to many educators. It belongs in a technical school, not in a college. The purpose of the college is not to make a living in life but to make life worth living. Albert Jay Nock's message of almost fifty years ago has just as much meaning today. He wrote:

> Education, in a word, leads a person on to ask a great deal more from life than life, as at present organized, is willing to give him; and it begets dissatisfaction with the rewards that life holds

> out. Training tends to satisfy him with very moderate and simple returns. A good income, a home and family, the usual run of comforts and conveniences, diversions addressed only to the competitive or sporting spirit or else to raw sensation-training not only makes directly for getting these, but also for an inert and comfortable contentment with them, Well, these are all that our present society has to offer, so it is undeniably the best thing all round to keep people satisfied with them, which training does, and not to inject a subversive influence, like education, into this easy complacency. Politicians understand this-it is their business to understand it-and hence they hold up "a chicken in every pot and two cars in every garage" as a satisfying social idea. But the mischief of education is its exorbitance. The educated lad may like stewed chicken and motor-cars as well as anybody, but his education has bred a liking for other things too, things that the society around him does not care for and will not countenance. It has bred tastes which society resents as culpably luxurious, and will not connive at gratifying. Paraphrasing the old saying, education sends him out to shift for himself with a champagne appetite admidst a gin-guzzling society.
>
> Training, on the other hand, breeds no such tastes; it keeps him so well content with synthetic gin that a mention of champagne merely causes him to make a wry face (From Free Speech & Plain Language, N.Y: William Morrow & Co, 1937.)

As a profession, we have become quite content with synthetic gin. Education is a luxury which our society has been unable and unwilling to afford. Illiteracy rates continue to rise; standards for admission to higher education continue to fall; and the technological revolution has polarized the educational establishment. The pendulum is moving, however slowly, toward a reaffirmation of the original purposes of higher education and a restoration of more traditional standards.

The questions raised in the conference are provocative and broad. It is a luxury to vent some hopes and frustrations from my plaster board and stucco tower. Our profession is still very young.

Sometimes we take ourselves much more seriously than we have a right to. Having been educated and trained in a "discipline" which could hardly be called a discipline at the time I was educated and trained (my major courses were "speech correction" and advanced speech correction"), it is especially important to examine the nature of our endeavor some fifty years after the association was chartered.

We acknowledge some of the constraints which have had an impact. They include the economic realities which continue to discourage many bright young people from entering the field. Many, if not most of the leaders in our field have been educated and trained (at least initially) in disciplines other than our own (e.g. psychology, linguistics, engineering). Further, many University faculty have become fossilized in tenured positions. In addition, the do-it-yourself curricula of the seventies has resulted in less than rigorous undergraduate preparation. However, what is, is and what was, was. There is little point in going to the Museum. Let us look with renewed optimism at the very exciting document produced by the ad hoc committee on a single profession.

The core concept embodied in Figure I (p.9a), portrays the areas of knowledge pertinent to the profession of Speech-Language Pathology and Audiology is of great significance. It identifies the pre-professional areas which are an integral part of the education and training of speech-language pathologists and audiologists. In her Presidential address (Asha, 21, Dec. 1979) Norma Rees likened the opposing yet complimentary forces as centrifugal and centripetal. While her core was closer to the periphery in the present model, the forces which guide us are the same. Further, as the concept of the single profession was intensively studied, the model presented in the final report by the ad hoc committee is especially and germane to the issue. The University must provide broad preparation in the physical, natural and social sciences as well as in the arts. This is both the periphery and the central core.

All of the attendees at this conference will have had an opportunity to read the final report of the ad hoc Committee on a single profession and its credentialing. The likelihood is that many will come to the conference with points of view and firm opinions regarding the desirability of accepting one or another of the options presented by the committee. Surely, each of these option's impact upon undergraduate and graduate education

Most compelling evidence that we are seeing only that part of the elephant which we wish to touch comes from the October 1982 Master Report of Surveys and Discrepancies of the Professional Self Study Project. The discrepancies between service and training needs identified by the Regional Study Groups and considered high competency areas identified by supervisors and educational training program directors demonstrate the need for us to hold this conference and consider the issues. Are we what we say we are, or what we are?

It becomes apparent from even a cursory analysis of the Self Study Surveys, that Bachelor level persons are poorly prepared even by their own appraisal. However, it also becomes apparent that many of the certified professionals in both speech-language pathology and audiology do not feel highly competent in many areas. While the document highlights only those skills where there is a report of more than 80 percent or less than 30 percent incidence of high competence, an examination of the data in Table I is revealing.

Less than 50 percent of the 597 CCC-SP practitioners judge that they are highly competent to evaluate screening instruments, yet more than 90 percent feel that they are highly competent to select individuals for a caseload. How do we account for less than 50 percent feeling highly competent to treat motor speech disorders while 92.9 percent judge themselves to be highly competent to treat articulation disorders? What is motor speech disorder anyway? What was the advertisement in Asha directly below the announcement of graduate education conference offering training in myofunctional therapy? Is this part of our discipline? Or, how can we account for less than 50 percent of the CCC-SP practitioners who feel they are not highly competent to evaluate and treat non-speaking persons, work with the aged, the bilingual/bicultural, the multiply handicapped, the person with fluency disorders, phonation/resonation disorders or treat communication problems related to hearing. Just as disturbing is the report that only 12 percent of the 577 practitioners with CCC in Audiology feel highly competent to evaluate a child's language disorder. Yet, 86 percent of the CCC-A practitioners feel highly competent to evaluate auditory function in order to determine site of lesion.

The multidisciplinary nature of our own discipline is very obvious from a glance at the convention programs or the many specialized journals. In the past I have had great difficulty assigning treatment for a hearing impaired youngster to a well credentialed audiologist. She really didn't care to do "rehab" and admittedly didn't know much about it. There are those among the well credentialed speech-language pathologists who cannot evaluate and treat aphasia, or neuro-muscular disorders, or fluency problems. The list can be extended. It leads to the inescapable and increasingly obvious conclusion that we are not all things to all people. Our uniform central mission is clear---human communication and its disorders.

As we mature, we gain a better appreciation for all of the complex factors which have brought us to and kept us in a profession whose major purpose is the delivery of services to improve the quality of human life. Our being is an undefinable combination of nature and nurture. Students who are entering Universities and choosing to study Human Communication and its disorders are the product of more than twelve years of formal education. They come with varying degrees of intellectual rigor, verbal ability, and personal sensitivity. During the four years, they must continue to develop a core of secure individuality. They must continue to attempt to understand their goals, motivations and desires; to heighten their ability to make independent judgements; increase their aesthetic sensibilities; learn of man's cultural heritage; know social issues of the modern world; and recognize the changing concepts of man and our interaction with it.

Our student must acquire a curious and scholarly attitude and committment toward learning and a lack of rigidity of thought. He/she must have the wherewithal to break out of the centrifuge and not merely be a technician in the pheriphery. He/she must have had sufficiently broad academic background, and to be able to select, savor, and appraise intelligently. This is what the University must provide in the education of speech-language pathologists and audiologists.

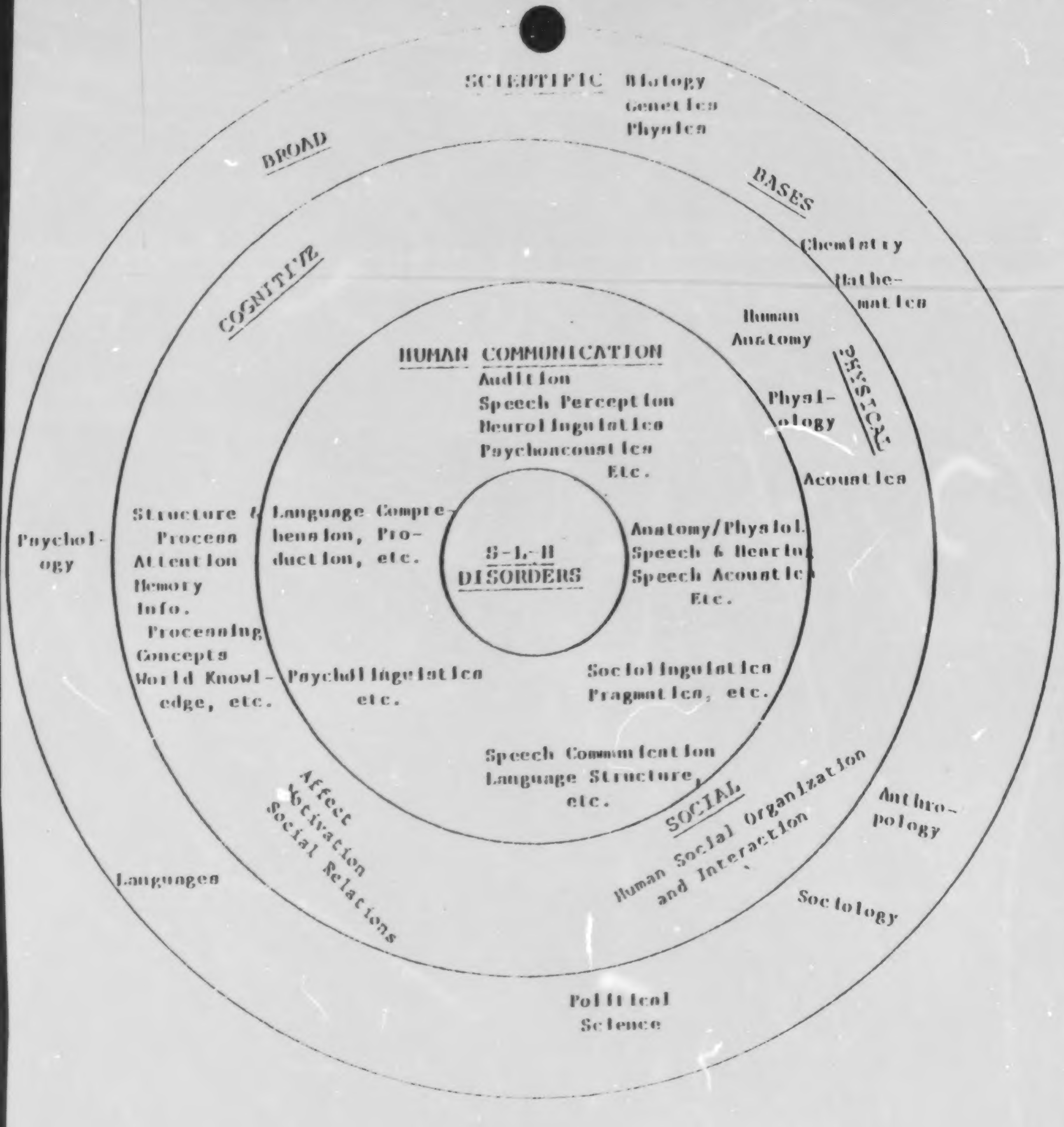
SCIENTIFIC
Biology
Genetics
Physics
BROAD
BASES
Chemistry
Mathe-matics
COGNITIVE
Human Anatomy
PHYSICAL
Physi-ology
HUMAN COMMUNICATION
Audition
Speech Perception
Neurolinguistics
Psychoacoustics
Etc.
Acoustics
Psychol-ogy
Structure & Process
Attention
Memory
Info. Processing
Concepts
World Knowl-edge, etc.
Language Compre-hension, Pro-duction, etc.
S-L-H DISORDERS
Anatomy/Physiol.
Speech & Hearing
Speech Acoustics
Etc.
Psycholinguistics etc.
Sociolinguistics
Pragmatics, etc.
Speech Communication
Language Structure, etc.
Affect
Motivation
Social Relations
SOCIAL
Human Social Organization and Interaction
Anthro-pology
Languages
Sociology
Political Science

Figure 1. The Areas of Knowledge Pertinent to the Profession of Speech-Language Pathology and Audiology

Issue V. How may we better prepare clinicians for the realities of providing services to the communicatively disordered in a variety of settings?

a. How can we prepare clinicians to interact effectively with members of related disciplines, clients, families, including skills at oral and written reporting and cooperative planning?

b. Should professional training teach administrative, management and marketing skills?

c. Should professional training aim to prepare clinicians who are familiar with the requirements of specific settings: schools, hospitals, university teaching, private practice?

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To say that I approached the preparation of this issue paper with some trepidation is clearly understatement. I reviewed the last 20 years of ASHA magazine and searched other professional journals for similar issue discussions. I read the review literature sent to participants, along with minutes of previously held conferences on professional training in our field. I discussed the issue with colleagues (they advised me to be "scholarly"); with students (they advised me to be kind); and with my husband (he advised me to get it over with).

The more I read and thought and discussed, the more difficult answering the question became. Had I begun to write this paper immediately after receiving the assignment, the answer would have been simple and straightforward. For question A, I would have made a long list of curriculum and skill areas that should be included in graduate training programs. For questions B and C, I would have answered simply "yes".

As the paper developed, however, the question became much more difficult to answer. Basically, the answer has not changed. Within reason, students must be comprehensively trained in order to provide competent services to the communicatively handicapped. I believe that the problem is that we simply cannot do this within the structure, confines and limitations of our present academic and certification requirements. My greater fear is a deeper one: we cannot do this extensive preparation given the raw material - the students - that this profession is now attracting. The issue may be circular; that is, we may only attract certain kinds of students because of the nature of our training and the resultant prestige level, salary level, responsibility level and job opportunities available at the conclusion of training.

UNDERGRADUATE PROGRAMS

To answer the question "How may we better prepare clinicians for...", it is necessary to begin by looking at the undergraduate programs now used as the underpinnings of this profession. If we start with the premise that training competent speech-language pathologists and audiologists depends on a solid base of information in science and humanities, we must believe that the continued existence of BA level programs is the genesis of many of the professional problems this field now faces. I believe that BA programs encourage undergraduate majors to begin "specializing" in speech, language and audiology coursework too early in their college careers. This cuts short the more stringent general academic preparation which is indispensable in developing the kind of graduate student needed in this profession.

The skills and training needed to produce an individual who can make reasoned professional judgements, plan programs, supervise other personnel, judiciously administer and interpret diagnostic procedures, develop innovative service models, conduct skilled therapy, and engage in management of the communicatively handicapped in cooperation with other professionals, require time, but they also require that a certain amount of general training, learning and maturing has taken place. Undergraduate courses in speech-language pathology - audiology tend to be watered down versions of course material offered on the graduate level. They attract students looking for watered down courses, and allow them to be credentialed for some positions in this field, most notably in public school settings. The pressures of preparing undergraduate students to meet state educational requirements for public school personnel with various titles exacerbates the tendency to provide miniversions of graduate level academic courses and practicum.

Characteristics of Students

A second series of questions that need study before we can decide how best to prepare clinicians capable of effective functioning in multi-disciplinary environments has to do with the general characteristics of the young women (mostly) and men (occasionally) attracted to this field. How are they different, for example, from those individuals attracted to professions like medicine, law, engineering? While we may know something about our entering undergraduate and graduate students with respect to academic preparation, grades, clinical skills, etc., there has been no systematic attempt to look at how prospective clinicians view themselves: how they view their future participation in the field: how they see their professional ambitions co-existing with other future personal goals.

My own experiences over the past 17 years of trying to juggle career/professional responsibilities with the responsibilites of being wife, mother, daughter, citizen at the same time led me to use some part of various courses I have taught to graduate and undergraduate students to explore these issues. I asked students to discuss why they chose speech-language pathology or audiology and how they saw themselves practicing their profession in future years.

It was not unusual to find that the young women in my classes viewed the profession as something they would do "until" - until they got married, until they had children - at which time they hoped not to work, or to work part time. In fact, some had thought this factor out enough to have chosen the field because they felt that, like elementary school teaching, for example, speech-language pathology - audiology was amenable to part time participation at various life stages. This field was chosen, rather than education, because the students felt that there were more immediate job opportunities, somewhat more prestige and at least equivalent salary levels. It is hard to believe that young women who choose law, medicine, dentistry, biochemistry or engineering as professions view themselves and their future professional involvement in this way.

We must ask, then, whether the young women we presently attract, no matter what is included in their training, are going to be the kind of independent, knowledgeable, confident, dedicated professionals who can hold their own when working on a rehabilitation team with physicians, dentists, oral surgeons, neurologists, etc. The important point, it seems to me, is that before clinicians can be trained to "relate" well to other professionals, to counsel patients and their families, to attain the maturity it takes to participate in multidisciplinary settings with independence, strength, knowledge and authority, students must be attracted who are amenable to such training. These students should view the profession and their involvement in it as a life-time and constant endeavor, not a waiting station until real life begins.

Issue V and the Viability of MA/MS degrees

Throughout the past twenty years, in numerous conferences, essays, presidential addresses and letters to the editor, the argument has been made that the MA/MS is no longer viable as the terminal professional degree in speech-language pathology or audiology. The recommendation has frequently been made that a professional doctorate, either in speech-language pathology or audiology separately or in communicology, would solve many of the training and professional problems we now face. I agree wholeheartedly.

Issues I, II and III deal more specifically with the nature and content of undergraduate and graduate education and the need for a professional doctorate. It was impossible, however, to discuss Issue V without arriving at the conclusion that the very nature of our present undergraduate-graduate structure, as well as the non-existence of the professional doctorate, stands in the way of better preparation for clinicans in the realities of providing services in any practice setting.

TRAINING NEEDS

During the past twenty years, the need for additional or more extensive training and practicum for speech-language pathologists and audiologists has been outlined in many facets of the field. Curriculum/competence guidelines have been suggested in aural rehabilitation (ASHA, 1980), in amplification (ASHA, 1982), in supervision (ASHA, 1974 and 1982), in non-speech communication processes (ASHA, 1981), and in serving mentally retarded individuals (ASHA, 1982).

Others have outlined training needs in broader critical areas. For example, Silverman (ASHA, 1981) recommended that training programs must teach individuals not only to critically evaluate research, but specifically to design and carry out program evaluation research. "Clinicians," he writes, "have a responsibility to evaluate the impacts of their programs on their clients," and therefore must be familiar with clinical research methodology.

Clark (ASHA, 1982) suggests the need for training in parent counselling techniques in audiology graduate programs. Cunningham et al (1981) point out the need for a professional issues curriculum. The authors state that training programs must produce qualified speech-language pathologists and audiologists who have the professional attitude necessary for dealing with issues outside the therapy room or sound treated booth. They suggest the necessity for providing students early in their training with information about administration, laws affecting our work, marketing, influence of other professional groups on our work, and client-advocacy methods. Such study, they feel, will produce clinicians who are prepared to handle administrative duties commonly encountered by praciticing speech-language pathologists and audiologists. It will also provide students with the impetus and motivation to study, follow and become involved in legislative and/or social trends affecting the delivery of their services.

Goldman and Levy (1982) argue that educators must train students, not only to be competent practitioners, but to have pride in their profession, heightened self image and the capacity to articulate to other professionals and the public the value of the services they provide. The authors also suggest clinicians' need for administrative and financial management skills.

The growth of private practice as a viable practice setting has led to the need to provide graduate students with information and training about private practice and the financial, marketing, management, legal and business expertise needed to practice privately (Loavenbruck and Hampton, 1982). The addition of hearing aid dispensing components to audiology practices in a variety of settings also adds many needed skills to the training of clinicians (Loavenbruck and Madell, 1981).

In 1971, NAHSA and ASHA jointly sponsored two workshops to outline and discuss the training needs of clinicians in community speech and hearing clinics (Brown and Porter, 1971). The workshops brought together community agency directors and directors of university graduate programs. Among other recommendations, workshop participants pointed out the need for a "professional" model of training. This model emphasizes the development of a "professional attitude on the part of the individual with recognition that he is to become an 'expert' in communication disorders relating to other professionals on that basis..." (p.3)

Participants outlined a long list of additional training needs to adequately prepare clinicians who could work effectively in community speech and hearing agencies. Among these were training in 1) teamwork concepts, 2) relating to other professionals, 3) financial exigencies of providing speech-language pathology and audiology services, 4) report writing, 5) effective oral presentation, 6) aural rehabilitation, 7) counselling, 8) normal child development, 9) effective utilization and coordination with other community resources and 10) patient and agency management skills. The need for practicum experiences with wider varieties of age groups and disorders was also discussed.

Other conferences, including the Highland Park Conference on Graduate Education in Speech Pathology and Audiology (1963) and the Big Ten Conference on Preprofessional Education and Training in Speech Pathology and Audiology (1970) outlined similar training needs.

Our professional literature has increasingly noted the impossibility of providing the necessary training for speech-language pathology and audiology within the confines of present masters level programs and practicum requirements for CCC. Davis (1971) states:

> The great difficulty seems to be that, at this point in time, our profession operates on the assumption that these kinds of skills and attitudes can be largely accomplished by the fulfillment of 275 clock hours of practicum experience (the equivalent of something on the order of eight weeks of full time professional practice). In addition, too often even this minimal practicum experience is provided in an on campus clinical setting which exists primarily to serve the training and research needs of the department in which it is housed and which only rarely resembles the type of reality setting in which most of the graduates will eventually function as practitioners. (p.11)

Darley (1969) estimates that, by the time the average physician goes out to set up medical practice, he/she has had first hand acquaintance with about 35,000 patients for whom that physician has had personal responsibility and followed for extended periods of time. Hundreds of other cases have been studied on rounds, case conferences, classroom demonstrations, etc. By contrast, the typical masters student in speech pathology/audiology with 300 or so required hours of direct clinical practice, has seen many fewer patients, the great majority of whom have probably had relatively prosaic communication disorders, and none of whom have been followed for any extended period time.

How many of our students in speech-language pathology can begin to feel expert at treating aphasics, stutterers, laryngectomies, voice cases, hearing impaired children, mentally retarded children, neurologically impaired children and adults? How many have the experience, training, confidence, and mature presence needed to effectively counsel the family of a newly identified deaf child or the family of a newly aphasic stroke or accident victim? How much difference does a CFY year make in the attainment of these skills? How many of our audiology graduates can expertly carry out hearing aid evaluations, fittings, and follow up procedures? How many understand, and could communicate, the implications of various hearing losses and amplification devices in classroom situations? How many could deliver an effective in-service program to nurses, aides, physicians, or senior citizens about hearing loss and hearing aids? As Miller and Deutsch (1983) state: "The tragic reality is that our MA-MS graduates with majors in audiology are too often inadequately trained in basic sciences, unable to explain diagnostic and therapeutic procedures in meaningful anatomic and physiological terms, and inadequate in their understanding of the theory and practice of modern electrophysiologic procedures; they have little chance of holding their own in either formal or informal interaction with the medical profession." (p.3 of article draft).

While we must recognize that we cannot possibly teach graduate students in any reasonable length of time to be proficient and expert in every aspect of the field, but rather must teach them how to obtain information and skills as a lifelong process, it must also be recognized that the training task can no longer be approached in a two year masters program. Simply extending the MA-MS into a program lengthy enough to accommodate the skills and academic work needed is not a solution. This would merely add to the expenses of the degree, with no additional prestige at the end since the degree would still be a masters degree.

A three or four year post-undergraduate program of study leading to a doctorate, however, would provide sufficient time to present the academic and professional material necessary to train competent clinicians and would allow time for more extensive practicum experiences.

The Professional Doctorate as a solution

While some believe that the doctorate in philosophy is a robust enough degree concept to encompass both those whose major interest is research and those whose major interest is the attainment of a "master clnician" status, most believe that the traditional Ph.D. does not adequately address clinical matters, nor does it adequately address the needs of those practitioners whose interests are teaching, administrating, or dealing with larger programmatic issues.

Mase (1971) has stated:

> The Ph.D. is not designed to prepare a clinician but rather academic professor and a research person. We have many good clinicians with Ph.D.'s, not because of the requirements for the degree but in spite of them. We will never get the clinicians we need until we move to a doctorate of speech pathology and a doctorate in audiology - professional degrees. We will never get the acceptability from medicine and dentistry until that step is taken. We should consider whether it should be a doctorate in communicology rather than the separate degrees. (p.35)

Professional doctoral programs have also been recommended by Feldman (1981 b), who wrote that our profession is clearly broad enough to warrant a professional doctorate, and that our traditional identification with the lower paid non doctorate professions has been "costly to us in many ways."

Miller and Deutsch (1983), in discussing the future of audiology, state:

> We have become convinced that the masters degree is no longer viable as a terminal professional degree for audiologists, and that a doctorate is essential, for proper care of

> the hearing impaired and for our survival. We refer here not necessarily to the Ph.D., which is classically a degree for the research scholar, but to some form of a professional doctorate that is analogous to the Doctor of Psychology degree that is being offered by a number of institutions. If the audiologist is to achieve and maintain recognition as an autonomous health professional, the doctorate must become the qualifying degree for patient care....(p.4 in draft).

They further call for substantive content and philosophic changes in our training programs to reflect the changes and expansion in audiologic knowledge in the past twenty years.

It is probably safe to say that many of the students now enrolled in doctoral programs are there, not because they are primarily interested in research, but because 1) they want to attain greater skill in practicing all aspects of their profession and 2) they want to practice with a title that will signify to the public and other professionals the depth and extent of their professional preparation.

This is not in any way to diminish the need for trained researchers in our field, or to suggest that those of us primarily interested in clinical practice do not have a clear need to be informed and expert consumers of research. As clinicians, we must also be capable of looking at our clinical work with the ability to identify, design and carry out research. To the contrary, I feel that we demean our clinical skills and expertise when we continue to suggest to the public that the knowledge and training needed to attain clinical skills can somehow be contained in a two year masters program.

We are vastly a field of clinicians - of practitioners - and to adequately prepare us for the realities of this practice, major changes in our training and in our idea of ourselves are essential.

ANSWERS

To return then to the questions of Issue V, questions b and c must be answered "yes." Practitioners in this field should be familiar with administrative, management and marketing skills. These skills will lead to more effective design and delivery of speech-language and audiology services to the communicatively handicapped. Marketing skills, which include marketing research as well as designing marketing programs, will enable us to better define those individuals who need our services, as well as identifying effective means of educating the public and other professionals about the value of our services.

Practitioners should also be familiar with the exigencies of practicing in specific settings. While many areas of overlap exist, the details of efficient clinical work in various practice settings are unique, and shape the way in which we can provide service. While some specifics, such as laws affecting various practice settings, can be presented academically, the most effective way to train students to function well in various settings is to greatly expand the practicum requirements for time spent in these settings. It seems clear that 300 supervised hours cannot begin to adequately prepare anyone to practice speech-language pathology or audiology.

How then may we best accomplish these ends?

1. We must insure that we have quality students to train. In my opinion, the existence of undergraduate degrees in speech and hearing reduces the quality and preparedness of the students who enter the profession. It suggests that BA preparation credentials a certain level of practice and attracts those students whose interests and motivation are at that minimum level. It reduces the time that undergraduates have to study the more basic science, mathematics and humanity subjects which would better prepare them for graduate work.

Science requirements, as well as academic requirements in general, for entry into our graduate programs shoud be more stringent.

2. We must begin to identify ways to attract students - women and men - whose seriousness of committment to this profession is equivalent to that found in other more established and prestigious professions. In order to attract such students, however, we must take those difficult steps as a profession which will upgrade our credentials and insure a reasonable payoff for the time and money spent by students to become practitioners. If all that we can continue to offer graduates are low paying jobs in educational and health institutions or quasi-technician jobs in physicians offices, what kind of students can we hope to attract?

3. We must recognize that, given the extensiveness of the academic and clinical training needed to adequately prepare practitioners in speech-language pathology and audiology, a two year MA/MS program is no longer sufficient. Clinicians can best be trained for the realities of providing services in a variety of settings by allowing sufficient time for that training to occur.

Academic preparation should be expanded on the graduate level to include more extensive coursework in clinical areas, speech and hearing science and research. Speech-language pathologists should be better informed about hearing problems and audiologists should be better informed about speech-language disorders. Aural rehabilitation coursework, as well as extensive hearing aid coursework, should be added. Recent advances in electrophysiologic measurement and interpretation should be stressed for both audiologists and speech-language pathologists.

Professional doctoral training, similar to that given in optometry and psychology, seems to be the ideal programmatic choice to accommodate our academic and clinical training needs. This may mean returning to a two level certification system, perhaps as a transition, or as a more permanent system to identify different levels of skill and training. A time-locked grandfathering system could be devised to accommodate existing practitioners who wish to upgrade their credentials.

More importantly, it is essential for this profession to recognize that, even if we could somehow compress the training needed into a two year program - even if we could train students in such a short time to be effective interactors and skillful oral and written reporters - our interaction problems would not be solved. We will never function on an equal level with physicians and other health practitioners in the eyes of the public we serve until our titles and training are equivalent.

4. Clinicians can best be prepared for the realities of various practice settings by a) being trained by clinicians who are themselves actively involved in these practice settings and b) spending longer residencies in various practice settings.

The former recommendation would require that the status of clinical supervisors in most university programs be upgraded. The concept of clinical professorships, with tenure requirements which recognize and reward clinical skills and accomplishments, must be given serious consideration in our training institutions. Clinical professorships have long existed in medical and dental schools. Those whose major responsibility is the supervision and training of clinicians should be encouraged - required - to maintain active involvement in practice. Private practitioners, as well as practitioners in other settings, should be encouraged to participate in university training programs while maintaining their practices. The notion that private practice is somehow in conflict with university involvement should be discarded.

Practicum requirements in both speech-language pathology and audiology must be greatly expanded. The best training for reality is probably longer stretches of reality, and more extensive "residency" requirements are needed. Certainly 300 supervised hours is entirely insufficient - ten times as much - spread out over disorder types and in various practice settings - more closely approximates what is needed to produce effective, mature clinicians whose opinions and work will be respected by other professionals and the public.

Finally, as Darley (1969) stated:

> Our goal is the provision of first rate patient care. How are we to achieve it? By bolstering, enriching, and increasing experience under the watchful eye of master clinicians in settings that provide interprofessional stimulation and influence, together with making a scientific attack on real life questions that grow out of that clinical situation and are answerable only in it. (p. 148)

This conference represents a crossroads for speech-language pathology and audiology. There is no doubt that the changes that must occur to move us forward to the realities of practice in the eighties, and that will give us the foundation for our future as health practitioners, are difficult and enormous. But we are 37,000 strong; we are unique since our skills are held by no other profession; we are needed since thousands of untreated communication disorders continue to exist. We need only believe this and begin to make those difficult transitions now.

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ISSUE VI. HOW MAY WE PREPARE SPEECH-LANGUAGE PATHOLOGISTS AND AUDIOLOGISTS FOR A CHANGING SOCIETY?

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INTRODUCTION

> *"But there is no room for complacency as we face the awesome realities of the next half century. For it will be in the challenge of the present and the future that the Association will truly be tested if its Members intend to maintain the relevance of those objectives described so many years ago. The problems of the present are familiar to us all: the continued need for public education; the provision of expanded professional services to meet the requirements of individuals not receiving them, especially those in minority populations and in rural communities; the establishment of increased educational and scientific activity of quality in the face of a recessive economy and changing societal priorities."*
>
> (Yantis, 1976)

In addressing the question: "How may we prepare speech-language pathologists and audiologists for a changing society?" many thoughts come to mind. One could assume a narrow interpretation of the question and focus on the demographics of a changing society as reflected in the increasing numbers of elderly persons, ethnic minority persons, as well as severely handicapped and non-speaking members of our society. On the other hand, one could assume a broad interpretation of the question and focus on the academic, clinical, and professional preparation of speech-language pathologists and audiologists within the context of social, economic, and political factors which impact upon our personnel preparation. I have chosen the latter perspective.

Given the current economic climate of continuing inflation and concomitant recession combined with the current "professional" climate which seeks to define our professional identity (Feldman, 1981), it seems imperative that we consider the broad perspective first in order to provide a theoretical base from which to consider the more narrow interpretation of the question. In discussing the question informally with colleagues representing a cross-section of our profession, the broader perspective was deemed to be of greater significance by them as well. Based upon these discussions, three major points have emerged which, in my opinion, form the basis from which more specific answers to the question may be generated during the course of this Conference. These three points are:

1. The future training of speech-language pathologists and audiologists must reflect a "return to basics." The concept of "core training" in the basic processes of human communication and its disorders must be the central focus of our academic preparation (Rees, 1981).

2. The future training of speech-language pathologists and audiologists must reflect a renewed commitment to scientific research and the application of this research to clinical training.

3. The future training of speech-language pathologists and audiologists must reflect the changing demographic and economic trends of our society in terms of meeting the needs of unserved and underserved populations.

Once these factors have been deliberated and discussed by the Conference participants, it then will be possible to view more specific issues relating to (1) the preparation of clinicians who can identify, evaluate, and provide clinical services for neglected populations; (2) the implementation of appropriate changes in academic curricula.

A RETURN TO BASICS

The training of future speech-language pathologists and audiologists to meet the challenge of a changing society means - in the broadest sense - a return to the basics. Rees (1981) speaks cogently to the reaffirmation of a common core of knowledge in human communication and its disorders, and she stresses the creation of a "framework for training that emphasizes broad basic knowledge at the core of the discipline rather than narrow technical and specialized skills at the periphery of practice."

Let me assert at the onset that in using the phrase "return to basics," I in no way intend to convey the impression that we should turn back the clock 50 years and re-invent the wheel. Indeed, I believe that given the significant scientific and technological advances made in our profession over the past decade, it is quite conceivable that one could compress our knowledge from 1925-1970 into a two-hour lecture entitled "Historical Perspectives in Communicology," and then proceed to a contemporary discussion of basic processes underlying normal and disordered communication. This is not to convey disrespect or lack of appreciation for the scientific knowledge base gleaned from the founders of our profession, but it recognizes that the past decade has witnessed a scientific and technological revolution - and it is the advancement of this new knowledge related to our understanding of normal processes which we should impart to our students. Minifie (1982) speaks to this point:

> "In a very real sense, we are in the midst of a technoigocial revolution which is changing the landscape of our clinical fields. Digital logic circuits are reshaping the potentials for clinical diagnosis and clinical management processes in very dramatic ways. If the technology continues to advance at breakneck speed, then deliverers of clinical services either must develop sufficient knowledge about these devices so they can be utilized toward goals which are clinically sound, or our practitioners will become slaves to someone else's technology and lose control over the direction of the clinical process."

To stimulate our conference discussions over the next few days, I would like to propose that one specific suggestion for strengthening our students' preparation in the normal processes underlying speech, language, and hearing would be to return to the ASHA requirement of *18* hours of coursework in the basic areas as was the case prior to 1971 when the policy was changed to reduce the amount of coursework in the basic areas from 18 to 12 hours. I submit that a return to the requirement of 18 hours not only would strengthen the academic and clinical preparation of our students, but it would facilitate their ability to adapt to changes in society. Moreover, it would enhance their ability to become adaptive and resourceful problem-solvers in meeting the needs of communicatively impaired minority populations. Rees (1979b) comments similarly:

> "Most emphatically, I do not mean that we should train our students to know a little bit about everything. Many of us have looked with dismay at approaches that identify broad training with a sampling of knowledge about many types of handicapping conditions. I have in mind instead the adaptability that comes only from a real grasp of fundamentals. Professionals in speech and hearing solidly trained in basic principles and processes of human communication and its disorders will not only be able to adapt to changes in information and societal trends, if I am right they will be the ones who create that information and produce these societal trends."

RENEWED COMMITMENT TO SCIENTIFIC RESEARCH

Coupled with a "return to the basics" is a renewed commitment to scientific research in our academic and clinical training programs. It is critical that we identify our profession as one "where the decisions and activities of clinical practice are firmly rooted in theory and research findings produced by our own and related areas of scientific inquiry (Rees, 1979a). That we currently may be placing less than optimal emphasis on scientific research and thereby weakening our scientific knowledge base is not a new phenomenon. Indeed, this concept was discussed at length at the St. Louis meeting of the National Council of Graduate Programs in Speech and Language Pathology and Audiology in 1981. Minifie (1982) also has spoken candidly to this issue:

> "Frankly, I believe that the foundation upon which current professional practice in speech/language pathology and audiology is structured is in need of serious repair...Unless we make a genuine commitment to a stronger scientific base upon which to structure new developments in clinical service delivery, our professional services will gradually weaken to the point where other professions will · gradually assume our role."

One way of "shoring up" our commitment to scientific research is to encourage the formation of an alliance between the speech scientist and the student clinician in training. More specifically, I suggest that we eliminate the dichotomy which exists between the scientist and the clinician. We must bring the scientist out of the laboratory into the clinical setting, and conversely, we must bring the clinician into the laboratory. For the sake of discussion, let me suggest that academic training programs engage only those speech and hearing scientists who hold the Certificate of Clinical Competence and who have an expressed interest in applied clinical research. Extending this concept further let me suggest that the speech and hearing scientist should be required to spend a stipulated portion of time *in the clinic* as a supervisor, or as a clinician conducting demonstration therapy. While these suggestions will surely fly in the face of the philosophical tenets of many of my colleagues, I submit that the positive values derived from such a liaison between the scientist and the clinician will outweigh - in the long run - the negative response by some members of our profession. In any event, I urge that the Conference participants give thought to this issue and propose alternative suggestions for attaining the same end product.

Just as it has been suggested that the scientist spend time in the clinical setting, it is equally important that the student clinician be instructed in the methodology of scientific inquiry and in applied clinical research. The ultimate goal of this two-pronged attack is the continued development of a solid scientific base from which new knowledge will emerge. Specifically, it is suggested that students must be provided with the necessary requisites to design clinical research, to write behavioral objectives, to specify performance criteria, and to measure the outcome of therapy. In short, we must prepare students with the skills to implement data-based therapy and to document the efficacy of their treatment programs. The importance of renewed interest and emphasis on scientific research should not be understated. Minifie (1982) reiterates this point:

> "It is imperative that as professionals we reaffirm our commitment to the continuing development of the scientific foundation upon which our professional services delivery systems depend. The time has come to seriously reshape the requirements of our educational programs, by upgrading the nature and extent of scientific training of students seeking entry into this profession. We must provide relevant knowledge for clinical service delivery in the next decade, including appropriate experience with computer programs to support diagnostic and management services."

MEETING THE NEEDS OF UNSERVED AND UNDERSERVED GROUPS

In her 1982 *Asha Annual Report* to the membership, President Laura Wilber commented on the changing demographic trends in our society by stating: "As a nation we are becoming older. We are learning to live in a 'high technology' society. We are becoming increasingly multiethnic and multilingual, and we are facing financial strains unknown since the Great Depression." In considering the social, cultural, and economic factors which impact upon the delivery of services to the communicatively impaired, we are focusing on complex, difficult, and sensitive issues. Traditionally, as a profession, we have avoided or "skirted" these issues - perhaps because of their complexity, or because of a sense of futility in trying to provide solutions to the myriad of problems which soon become apparent in wrestling with these matters. Yet, it is encumbent upon us to examine them objectively and carefully, if we intend to meet the needs of those populations which, historically, have not received adequate services. According to Dr. Lorraine Cole, director of the ASHA Office of Minority Concerns, we can identify five populations that currently are unserved and underserved by speech-language pathologists and audiologists. These five groups are:

1. The American Indian population,
2. The "institutionalized" population (incorporating those persons institutionalized in prisons, mental health facilities, and nursing homes),
3. The "economically disadvantaged" population (incorporating racial minorities and non-institutionalized elderly),
4. The "rural" population,
5. The "bilingual/bicultural" population.

These groups are not mutually exclusive. For example, a Black child who lives in the inner city and who speaks using Black English could be classified into more than one of these categories.

That we as a profession have failed to meet the needs of these groups in terms of the academic and clinical training of students as well as in the provision of appropriate and adequate clinical services has been documented (Cole, 1981; Glass, 1979; Jackson, 1979; Mueller and Peters, 1981; Nerbonne, Schow, and Hutchinson, 1980; Taylor, 1980; Toubbeh, 1982). Whether we as a profession intend to give more than perfunctory "lip service" to the development and implementation of academic curricula and clinical service delivery programs for these underserved populations remains to be seen.

Given the multifarious nature of the five groups identified by Dr. Cole, and given the limited amount of time allocated to our presentations this evening, extensive discussion of each group would extend beyond the bounds of my time as well as my expertise. As a Black speech-language pathologist and college instructor, however, I am acutely aware of the needs of bilingual/bicultural populations, and it is this population I wish to discuss in the remaining portion of my paper.

Within this context, it would seem appropriate to examine the data gathered from the ASHA Self-Study project. Although many of the responses were predictable, the findings with regard to bilingual/bicultural populations, nonetheless, were alarming. Consider, if you will, the following results extracted from the survey:

- Of all the special populations identified, ASHA members felt **least** competent to serve minorities. According to self-ratings, over three-fourths (77%) of the certified speech-language pathologists surveyed are not competent to serve this population.
- When certified speech-language pathologists and audiologists were asked where they received their training to work with minority populations:
  1. Only 13% indicated that they were taught during their academic or practicum training.
  2. 50% reported "job experience" as their major source of training.
  3. 46% reported that they either had no such training or that their training was minimal.

In addition to these data from the Self-Study project, consider the following statistics provided by the ASHA Office of Minority Concerns:

- Ethnic minorities constitute **2.3%** of the total ASHA membership.

- There is only **one** minority speech-language pathologist for every 5,000 minority persons with a communication impairment (Cole, 1983).

Are we to conclude from these data that although bilingual/bicultural issues have been investigated, debated, and discussed at length over the past two decades, that our profession is still struggling with basic issues? Are we to conclude that in spite of the proliferation of sociolinguistic research (Dillard, 1972; Hymes, 1974; Williams, 1970; Williams and Wolfram, 1977; Wolfram, 1969) that we still remain in an embryological stage of development with respect to our academic and clinical preparation of speech-language pathologists and audiologists to serve the American Indian, Black, Hispanic, and other racial and ethnic minority groups? I submit that the answer to both questions as documented by the responses to question #36 of the ASHA Self-Study report is a resounding "Yes!" As Taylor (1980a) succinctly observed in his assessment of ASHA's progress with respect to bilingual/bicultural issues: "One can easily get the feeling of having been here before.!"

At this juncture, one could pose the rhetorical question: "Why have we advanced at such a snail's pace?" Re-stated, one could ask: "Why have we failed to transfer our knowledge in the area of bilingual/bicultural research to our students in training?" Perhaps one response to these questions can be found in the following excerpt from an article written by the late Vernon Stroud in 1970:

> "Racism exists. Our profession was conceived in a racist society. Today we see the remnants, results, and problems left over from this...Until recently, national associations and societies in our field - bar none - showed a near void in participation or inclusion of Black people in planning, programming, and functioning. We didn't exist. We were just out there... More speech therapy is practiced in public schools than in any other setting, and it is here we find more institutional racism than in any other place. Many teachers lack compassion that is extremely important to deal with Black children. To make things worse, they don't know the Black child's language. I do not think of the language spoken in the Black community as 'sub-standard.' Many teachers do...We need to learn Black language, understand it before we criticize it, and reevaluate our attitudes."

Thirteen years have elapsed since Stroud's article. We have made significant gains in the interim years with respect to an increase in our knowledge based upon sociolinguistic research and data gathered from other disciplines. Still, a void remains in terms of the communication of this research to our students in training. We need only to look at the ASHA Self-Study data to confirm this fact. Whether this void exists because of attitudinal and philosophical differences or other reasons, the gap must be closed. If we are to meet the needs of our unserved and underserved ethnic minority populations, we must begin in our academic and clinical training programs The challenge is before us and cannot be ignored.

CONCLUDING REMARKS

In 1976 on the occasion of the 50th anniversary of the American Speech-Language-Hearing Association, Dr. Phillip Yantis observed that as a professional discipline, there was "no room for complacency" as our Association prepared for the "awesome realities of the next half century." In 1982, which marked the 25th anniversary of the enactment of the Civil Rights Act, Dr. Orlando Taylor reviewed the status of the "continuing controversy" relating to the assessment and management of the language of bilingual/bicultural groups. Citing contemporary research (Seymour and Seymour, 1977; Taylor, 1978, 1980b, 1982), Dr. Taylor urged speech-language pathologists and audiologists who serve "children from any minority group - be they Blacks, Hispanics, Orientals, Hawaiians, whatever" to be sensitive to the specific needs of these populations and to "provide services to individuals in the context of the family or community expectations, the state of the art in educational linguistics, sociolinguistics, and the law." Both Dr. Yantis and Dr. Taylor recognized the changing societal patterns which impact upon our profession, and both emphasized the import of these factors on our provision of services.

The data gleaned from the ASHA Self-Study report provide strong documentation of the need for modification in our academic and clinical training programs in order to meet the needs of our changing society. In my opinion, the data mandate that our preparation of speech-language pathologists and audiologists stress a solid foundation in the basic principles and processes underlying normal human communication. In addition, we must reaffirm our commitment to scientific research with the application of this research to clinical training and practice. Moreover, we must ensure that our students have a firm understanding of the social and economic factors which impact upon the delivery of services to unserved and underserved populations. Finally, we have the obligation to be in the vanguard of such change. Let me conclude with a quote from Dr. Orlando Taylor.

> "The point is that large professional organizations such as ASHA have a moral and ethical responsibility to conduct themselves in such a way as to reflect the multi-cultural and multi-racial character of the American society in *all* phases of their work and spheres of influence, i.e., public policy, administrative organization, recruitment, certification, etc." (Taylor 1980).

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National Conference on Undergraduate,

Graduate, and Continuing Education

Topic: What should be the role of specialty training in relation to minimum standards for professional preparation in speech-language pathology and audiology?

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PROLOGUE

spe-cial-ize (spĕsh´ə-līz´) to train or employ oneself in a special study or activity.

The American Heritage Dictionary

Audiology and speech-language pathology is one of the newest helping professions. Although services are presently provided within many different settings, the public schools function as the primary public agency through which the communicatively handicapped are served. Moore and Kester have described the pioneer efforts of one of the first public school systems to initiate "specialized" programs for those with speech impediments:

> "Chicago was one of the first cities to start a speech correction program. The 1910 annual report of Ella Flagg Young, the superintendent of schools said:
>
> > Immediately after my entrance upon the duties of superintendent, letters began to arrive filled with complaints and petitions by parents of stammering children-complaints thatthe schools did nothing to help children handicapped by stammering to over come their speech difficulty, but left them to lag behind and finally drop out of schools, petitions that something be done for these children.
> >
> > A recommendation was made to the committee on school management to the effect that the head of the department of oral expression in the Chicago Teachers' College be

> authorized to select ten of the members of the graduating class who showed special ability in the training given at the college in that particular subject and should be further empowered to give additional training to these students preparatory to their undertaking, under the direction of the department, correction of the speech defects of these 1,38, children.
> Instead of gathering the children to be treated for their troubles into one building or into classes, a plan was adopted of assigning to the young teacher a circuit and having her travel from school to school during the day. The object of this plan was to protect the young teacher from the depression of spirit and low physical condition that often ensue from continued confinement in one room for several successive hours at work upon abnormal conditions. It was soon found that the term 'stammering' had been assumed to be very general in its application and many children who had been reported as stammerers had not the particular defect reported but other forms of speech defect. (Moore and Kester, 1953, pp 49)

And a final interesting post-script:

> The superintendent's report in 1913 indicated that at the end of the first year of work, six of the original 10 speech teachers were dismissed:...the assumption

> being that the number of children needing special attention had been reduced sufficiently to make ten teachers unnecessary, but it has been found necessary to reinstate the original number. The calls from many schools for aid havebeen numerous, showing that the number of children having defects would continue large because of the influx of new cases. The calls also indicate increasing alertness on the part of the teachers in noticing defects and growing confidence in the value of corrective exercises.... In Chicago, the evidence of marked improvement in class work following immediately after thecorrection of the speech defect is positive.
> (pp. 49)

This seventy-five year old retrospective glimpse into our professional beginnings as "specialists" is fascinating for a number of reasons:

1. Communications disorders among a certain population had to be acknowledged and identified before services could be considered. In this instance, it was discovered not only that there were 'stammerers' in the public schools, but that stammering was a term which actually encompassed other kinds of speech defects which required remediation. The identification and the assessment of needs of a specific population requiring services still continues.

2. Then, as now, much of the initial impetus to provide services for the handicapped originated in the combined actions of concerned parents, and the

sensitive response to their pleas by persons in positions of authority who could establish appropriate services.

3. Children with communications disorders were also handicapped educationally. Remediation resulted in improvement in class work. The provision of 'special' services was justified then, as it is now, because the possession of a communications disorder was 'educationally significant.'

4. Finally, it was recognized that 'special training' was required to work with children with speech disorders. At that time, however, there was no recognized profession of speech-language pathology and audiology, no professional standards, no adequate training programs, no professional publications, a very limited body of knowledge about communications disorders and very little formal research. In large part, the need to provide services by specialists provided the impetus for the development of programs in training institutions. Because there were no national standards, each state developed its own training requirements. There still exists great diversity among the respective states in the requirements for training personnel to work in the public schools. It is interesting to note that some states include the title of 'specialist', for example "Communications Disorders Specialist" or Speech/Language/Hearing Specialist". (Taylor, 1980)

Public school personnel will alsonote with interest the rationale for developing 'itinerant' services, the awareness that confinement in inadequate facilities produces'depression of spirit and low physical condition' and reference to these pioneer speech teachers as both young and female.

Although some progressive school districts were providing services in that era, and a few colleges were beginning to develop training programs, for the most part the communicatively handicapped population were unrecognized and unserved. What was needed was the development of a new profession, consisting of individuals with special training who could identify, assess and assist all persons, regardless of age, who had special problems in communicating.

Growth of this new profession has closely paralleled the growth of the national professional association. In a History of the American Speech and Hearing Association, Paden describes the motivation which prompted the formation of the association in 1925: (Paden, 1970)

> "Many individuals engaged in the treatment of speech disorders had little or no formal training and many others had experience based on unscientific practices that it was worse than no training at all." (pp. 18)

Initially, the new association, first called the American Academy of Speech Correction, had rigorous requirements for membership. With time, it was recognized that the effectiveness of the association to bring about change was dependent upon involving a greater number of people who might not be as well qualified but who, nevertheless, were providing services to the communicatively handicapped. So requirements for membership were broadened, but with two classes, professional and clinical. At a later date, when requirements for the certificate of clinical certification were developed, again there was an attempt to make a differentiation among professional interests and clinical competencies, by issuing beginning and advanced certification in speech pathology and in audiology. At a later date, a single certificate was issued in audiology and in speech-language pathology, thus erasing the first and second-class professional status inherent in the beginning and advanced certificates.

In summary, within the past seventy-five years, the special needs of the communicatively handicapped in this country have been recognized and a new profession has evolved whose members are required to meet specified academic and clinical training standards, and complete other requirements before providing clinical services to the public. 'Specialization' was first used in the context of providing special services within the aegis of the public schools. As the new profession grew, use of the term 'specialization' was delimited to apply to special certification, beginning or advanced in audiology or speech pathology. As knowledge about human communication and its disorders increases, and clinical services expanded, consideration is now being given to a redefinition of the term, to apply to a narrowly focused and intensely concentrated area of clinical expertise.

The questions which underlie the historical development of professional specialization, are still relevant, still debated, still not resolved to everyone's satisfaction.

At the center of the discussion, are questions regarding professional competency, how is it developed through training and experience, how is it measured by experience, by assessment of performance, by examination? As the profession grows, as knowledge proliferates, as clinical services are extended to include even those with highly complex disorders, answers to these questions become increasingly complicated. Have we reached the point where we are now defining the professional specialist as someone who knows more and more about less and less, until.....

TOPIC

What should be the role of specialty training in relation to minimum standards for professional preparation in speech-language pathology and audiology?

I. A Definition of Specialty Training:

The terms 'specialty,' specialist,' and 'specialization' have been used and defined in many different ways. In this paper, the definition for 'specialty training' will be placed within the context of defining the field as a whole. All definitions are taken from the Position Paper of the Ad Hoc Committee on A Single Profession and Its Credentialing, dated July, 1982

The Discipline: That branch of knowledge, both theoretical and applied which focuses on human communication and its disorders.

The Profession: The delivery of human services to individuals with speech-language-hearing disorders aimed at the amelioration of communication difficulties stemming from such disorders; based fundamentally on the study of the discipline.

The Core: That zone of study integral to the profession, where all aspects of human communication and its disorders are viewed as interdependent; the knowledge common to all members of the profession.

Designated Areas of Practice: Specific ranges of clinical endeaver within the scope of the profession; applies particularly (but not necessarily exclusively) to entry-level competencies. Although each designated area of practice identifies a primary focus of professional endeaver, areas may overlap and intersect.

Specialty: Expertise within the scope of a designated area of practice. Refers to competencies beyond those expected at entry-level, pursued at the option of the individual.

A hypothetical example of specialty training, employing the terminology contained in the position paper, could be described as follows: within the discipline of human communication and its disorders, and the profession of speech-language pathology and audiology, with a designated area of practice in speech-language pathology, a clinician has decided to pursue specialty training in developmental language pathology.

Another hypothetical example of specialty training would be: within the discipline of human communication and its disorders, and the profession of speech-language pathology and audiology, with a designated are of practice in audiology, a clinician has decided to pursue specialty training in pediatric audiology.

A 'Proposed Plan for Specialty Certification in Speech-Language Pathology and Audiology' has been developed by The Specialty Certification Subcommittee of the Council on Professional Standards in Speech-Language Pathology and Audiology (COPS). The plan has been published in Asha in June, 1980, inviting membership comments and has been submitted to the Legislative Council which postponed consideration of the proposal until a later date. A copy of the proposal is appended to this report. It should be carefully reviewed and special consideration given to the Pro and Con statements which accompanied the resolution submitted to the Legislative Council.

In the introductory statements of the proposed plan, the following recommendation was made:

> Specialty certification is intended to benefit the public by identifying professionals whose exceptional clinical expertise is needed by individuals with communication impairments that pose special treatment problems. It is awarded only to those professionals who:
>
> 1) have acquired education, training and experience that is substantially beyond that required for a Certificate of Clinical Competence, and
> 2) who devote a substantial proportion of their clinical practices to a specialty area.

Within the context of the previous discussion, "specialty training" would be defined as follows:

1. Specialty training refers to expertise beyond that required for entry into the profession.

2. The areas of expertise pertain primarily to clinical endeavers within a designated area of practice.

3. The pursuance of a specialty would be optional, not mandatory.

4. Specific criteria would have to be developed defining the qualifications to be met in each of the recognized specialty areas.

5. The completion of requirements in a recognized specialty area would be acknowledged in some formal way, such as the awarding of specialty certification, or by some other appropriate documentation.

II. Minimum Standards for Professional Preparation in Speech-Language Pathology and Audiology:

Specialty training can properly beconsidered only within the context of existing training standards, because by definition, 'specialization refers to expertise beyond that required for entry into the profession. In the development of curriculum in speech-language pathology and audiology, training institutions are generally guided by legal and professional guidelines:

1. Guidelines for credentialing/licensing which are established by state departments of education or other state agencies and which specify the preparation of personnel to provide services in the public schools. To the extent that applicants must complete additional courework in professional

education, do directed teaching in language, speech and hearing in a public school setting and complete other requirements designed to familiarize the student with regulations, procedures, practices which are common to the public schools, the securing of the public school credential/license does require some broadly defined 'specialty' training. However, because case loads in the public schools may include children ranging in age from pre-school through secondary school and who may present a wide range of communicative disorders, the professional preparation of personnel to enter the public schools tends to be more general in nature than highly specialized.

2. Guidelines for licensing which is established by the state agency empowered to issue professional licenses required for practice in a non-public school work environment such as hospitals, clinics, and private practice. Because clinical services in these work settings may encompass a wide range of ages and disorders, preparation of professional personnel for licensure, tends to be more general in nature than highly specialized.

3. Guidelines for the certificate of clinical competence in audiology or in speech-language pathology issued by the American Speech-Language-Hearing Association. In contrast to credentialing and licensing, certification is voluntary, based on professional-ethical commitments to the standards of the Association. Requirements for ASHA CCC are broadly based, encompassing coursework

in normal and disordered communication and required supervised clinical practicum with clients of various ages with a variety of speech, language and hearing disorders. A year of supervised clinical experience and the passing of a national written examination is also required. The wording contained in the Application Booklet covering certification requirements continuously reinforces the concept of a broad base of understanding, beginning with a general education background, and progressing through the professional training.

The development of certification requirements by the American Speech-Language-Hearing Association have strongly influenced and shaped the development of program requirements in the training institutions throughout the country. In many instances, state requirements for licensure to practice in a non-public school setting, closely parallel ASHA requirements. Although, as previously noted, there is much greater diversity among the respective states in training requirements for employment in the public schools, nevertheless, the preparation of students for the credential in many states, has been influenced by ASHA standards.

In accord with the various legal and professional guidelines for the preparation of professionals, as briefly described, training tends to be oriented in the direction of generalization rather than a high degree of specialization. O'Toole and Zaslow (1969) expressed the prevailing philosophy which has guided the preparation of speech-language pathologists and audiologists during this era:

> "The basic responsibilities of the speech-language clinician do not differ whether performed in a hospital clinic, a community clinic, a rehabilitation center or a public school system. He must be competently trained for the profession, not just for the position."

The rationale for this orientation in the preparation of professional personnel can be discussed and perhaps debated at length. Here are a number of major considerations:

1. In a relatively new field, many persons may feel that it is still possible to cover much of the informational territory, both theoretical and applied, within the time alloted for training. In so doing, the student is provided with a broad perspective of human communication and its disorders.

2. Related to #1, above, but perhaps at a deeper level philosophically, is the assumption that there is acommon core of knowledge and skills, of ways of viewing and investigating and remediating communications disorders which is shared by everyone in the profession. If both students and faculty are willing (and able) to address the issues of commonality, it provides a deeper,richer insight into the processes which concern us all in one way or another, clinically, pedagogically, scientifically. Rees, in a very

perceptive examination of the various forces which influence the evolution of a profession, has labelled these the centripital "center seeking" movements which tend to bind the members of a particular field together. (Rees, 1979).

3. A third and perhaps more pragmatic reason for training professional "generalists" is the fact that many graduates have no way of anticipating in advance exactly what their future job assignments will be or the kinds of competencies they may have to demonstrate. In accord with this philosophy, a graduate enters the professional world 'prepared for anything.'

III. Specialization in the Delivery of Clinical Services

Because of the prevalence of speech-language-hearing disorders among all ages, speech-language pathologists and audiologists provide services to a diverse population and in a variety of clinical settings. Each agency or organization has its own regulations and procedures to be followed. Often a select population in terms of age and type of disorder is served. Some of the knowledge and skills acquired during professional training may be fully utilized. Other areas of knowledge and skills may be used only minimally or not at all. A number of job settings are briefly described.

Assignments in the public schools, while frequently itinerant, involving serving children taken from the regular classrooms in a number of schools, may also vary from this customary practice. Some language, speech and hearing specialists (to use one public school label) may be assigned to work only with children within a certain age range. Others may serve only children enrolled in special programs for the handicapped, or for those with severe language disorders. Caseloads may vary from relatively small, enabling the clinician to provide more intensive treatment, while other case loads may be excessively large, permitting less frequent contact with a major emphasis on group therapy. Depending upon the assignment, services may be provided to children of different ages with a broad spectrum of disorders, or, at the other end of the continuum, with small, highly selected groups of children. The former assignment encourages a 'generalist' orientation, the latter, provides a greater opportunity to specialize.

Although not nearly as numerous as personnel trained in speech and language, there are increasing numbers of audiologists employed in the public schools. Garstecki has given an excellent description of the tasks required of the public school audiologist and the special training and knowledge required to function in this work setting. (Garstecki, D., 1978)

Other work settings also establish certain conditions for the provision of services which must be thoroughly understood by those who function professionally within such environments. This includes specialized knowledge about procedures, guidelines for the provision of services, communication and cooperation with other professionals, requirements for accountability, etc. To give examples, Chapway, et. al. have presented an excellent review of the special requirements necessary to operate a private practice. (Chapway, R., Chwat, S., Gurland, G., Guillermo,P; 1981)

Based on reports from a large number of hospitals, Strandberg has reviewed in detail the speech pathology services provided in hospital programs in the United States. (Strandberg, T., Report 1 and 2, 1977) Lubinski and Chapey have discussed the nature of communications services provided through home health care agencies. (Lubinski, R. and Chapey, R., 1980). Toubbeh has discussed the problems in providing health care services to native Americans (Toubbeh, J. 1982). Payne-Johnson has discussed the problems of providing services to inner-city populations, especially as it pertains to families. (Payne-Johnson, 1982).

Each work environment mentioned (and many others that could have been included), the types of clients served, the mode of delivery, the problems encountered, the forces that operate to promote growth and change, and the negative factors that must be dealt with, requires special knowledge and skills. Adaptation to the demands of a specific job often requires a professional to become a specialist. Experience becomes the educator. Although work environments have been used to illustrate this point, it is obvious that confining one's clinical experience to a select population with specific disorders, has a similar effect. A number of examples can be given. Clark discusses parent counseling in a pediatric audiologic practice: (Clark, J., 1982).

> "It is the audiologist who most frequently gives the parents the final, and many times, long suspected confirmation of hearing loss. The period following the confirmation of hearing loss often represents a time of considerable shock and grief for parents regardless of their previous suspicions.

> University training programs in audiology often do not provide needed exposure in parent counseling. To ensure total patient care, audiologists must understand the counseling process and accept greater responsibility for it."

As another example, in recent years there hasbeen a marked increase in professional concern for the assessment of and the provision of services to autistic children. Prizant has discussed the role of speech-language pathologists in working with autistic children. (Prizant, B., 7, 1982 and 8, 1982). Prizant makes the following observations:

> ".... since most professionals and parents agree that communication development is the most crucial area for most if not all autistic individuals, the primacy of the role of the speech-language pathologist should be an obvious priority for future planning." (pp. 532).

And in another statement, the author makes a very insightful statement relevant to the acquisition of specialized clinical skills:

> "... a clinician's ability to be acutely self-observant and self critical is crucial, for success in intervention often depends upon modifying or adjusting interactive style to prevent or repair communication breakdowns." (pp. 535)

The age range of clients is another important consideration in the acquisition of clinical skills. Increased attention is being paid to the communications disorders associated with aging, identifying their special needs and defining the professional services which older people require. (Diggs, C., 1980; Mueller, P. and Peters,T, 1981; Nerbonne, M. Schow, R., Hutchinson, J., 1980)

This brief review is presented to illustrate an important point. For those providing clinical services to the public, there are a number of factors operating which focuses the time, attention, energy and interests of each individual clinician. The important contribution which work experience provides is illustrated by the information contained in the surveys made as a part of the Professional Self Study Project. Practitioners indicated that many of the clinical skills which they had acquired were job-related rather than learned as a part of their formal training. Further, both CCC-A's and CCC-SP's showed regular progression toward higher self-perceived competence with increased years of experience.

CONCLUSION: If the review of professional training and of the delivery of clinical services in various work settings has been reasonably accurate, it would lead to the following conclusions:

1. By philosophy and design, formal preparation to enter the profession tends to be more broadly based, resulting in trained "generalists" as clinical practitioners.

2. Because of the demands of the work environment and the concentrationon a select population, experience on the job, tends to produce professional "specialists" whose expertise is increased further by focusing their thinking and study on a specific area.

If these conclusions are valid for a reasonably large number of clinical practitioners, then the question no longer exists as to whether or not there should be specialists. By any criterion, "de facto" specialists exist. The primary issue to be addressed are the pros and cons of providing "formal" recognition for specialists through whatever means are most appropriate.

IV. Implications of Formally Recognized Specialty Training

The following discussion is based upon the assumption that after appropriate debate and deliberation an agreement has been reached that formal recognition of specialty training is meritorious and desirable and should be implemented. What then are the implications? Three inter-related questions have been posed for purposes of inviting exploration and speculation.

1. When should specialization begin?
2. Do we need both generalists and specialists?
3. What is the common core of knowledge and skill on which specialization may be based?

1. When should specialization begin?

Although this question can be interpreted in various ways, there is only one interpretation that merits consideration: when does preparation for specializing begin? In accord with the recommendations by the Specialty Certification Subcommittee, specialty certification is awarded only to those professionals who: 1) have acquired education, training and experience that is substantially beyond that required for a Certificate of Clinical Competence. A literal interpretation of the definition would lead to the conclusion that specialization training begins the moment the clinician enrolls in a course, embarks on a regimen of training or initiates experience with certain clients, at a point beyond the level of training required for the Certificate of Clinical Competence. This is analagous to building the apex of a pyramid without bothering to construct the base. The acquisition of knowledge, skills and expertise does not easily submit to arbitrary stratification. So it is with specialization as it pertains to clinical expertise. One caveat is added, however, pertaining to the definition of an acceptable area of specialization. If an acceptable area involves only the mastery of a specific method or technique which is applied rather indiscriminately to patients, without an awareness of the learning processes involved, or a concern for individual needs, then the profession is awarding specialty certificates to technicians, not to therapists. Depth and breadth of understanding is as critical a part of the definition of specialty training as are the acquired clinical skills.

Consideration of the question: when does preparation for specialization begin, is based on several hypotheses:

1. Specialization probably begins at some nebulous point in time when a persom makes a personal commitment to focus his/her attention, time and energy on a circumscribed area of clinical services within the profession, and

2. The decision to specialize varies with the individual, but probably, for most persons, begins with a broadly based background, with subsequent narrowing of interest (or concentration on) a specific area.

3. A person tends to learn and retain information that is most directly relevant to his/her personal and professional interests and goals.

Based on these hypotheses, preparation for specialization could begin at any point before, during or after formal preparation to enter the profession. And all of the information acquired along the way which relates in any way to the person's selected area of interest, is much more likely to be retained and incorporated into already acquired knowledge.

There are a lot of variables to be considered regarding the reasons people make the decisions that they do in the major areas of their lives, such as a decision to major in audiology, and subsequently, perhaps to specialize in industrial audiology. To this writer's knowledge, there is very little research information on this subject as it pertains to our professional field. But briefly, here are a number of factors which bear some relationship.

A number of studies have explored the personal characteristics of students who are more successful in academic and clinical performance in speech-language pathology as compared with others. (Flocken, J., 1980; Shriberg, L, Bless, D, Carlson, K, Filley, F, Kwiatkowski, J. and Smith, M., 1977). Shriberg, et. al. present a number of findings which are relevant to this subject;

1. Prepracticum undergraduate students who are interested in clinical work are more interested in working with children in a school environment than with adults in clinics and hospitals.

2. Interpersonal and professional-technical clinical skills are highly correlated for both undergraduate and graduate clinicians.

The authors comment on these findings as follows:

> "These data suggest that before actually testing their clinical predilections and talents, junior students associate successful clinical work with high interpersonal skills. They also perceive work in a school environment as most attractive. Perhaps this early preference for work with children in the schools reflects this field's strong educational image, particularly at the undergraduate level. Our impressions are that a significant number of communicative disorders majors change such goals. As they progress through undergraduate training, students generally perceive work in a nonschool setting as an equally attractive professional goal." (PP.314)

Another factor deserving brief comment is the possibility of a student identifying closely with a particular faculty member in the training institution and deciding to follow in his/her mentor's footsteps. How often this occurs, of course, and how long such identification lasts is a matter for speculation. But certainly the personal qualities of the faculty member, level of expertise, currency in the field, productivity etc. are important variables, some of which have been considered by Morris in a recent article on "Continuing Education for Academic Faculty in Speech-Language Pathology and Audiology. (Morris, 1981)

Clinical supervision, both as a part of formal training at the undergraduate and graduate levels, and as it pertains to the clinical fellowship year, has received considerable attention in the literature, especially the relationship between the supervisor and supervisee. Again, there is the strong probability that a decision to specialize may be influenced by the relationship with a strong and able supervisor. (Caracciolo, G., Rigrodsky, S., and Morison, E., 1978; Cimorell-Strong, J. and Ensley, K., 1982; Culatta, R. and Seltzer, H. 1972, 1977; Gerstman, H., 1977; Pickering, M., 1977; and Asha 12, 1982). Among the many issues considered under supervision is one of great significance as it pertains to this subject. How can a supervisor and a supervisee communicate and relate to one another so that the supervisee can use the supervisor as a role model and profit by the guidance and direction provided, and, at the same time, acquire an independent ability to problem solve and a sense of confidence and independence in working with clients? Depending upon the relationship, the outcome could result in student decisions from one end of the continuum to the other, that is, a high level of motivation to specialize in the same area of clinical experience, or, at the other extreme, to specialize in just about any area other than the one just experienced.

If a student begins to gravitate toward a particular area of specialization while in training, it is possible to further that interest by taking additional courses, selecting elective courses that are related to the area, arranging for special clinical experiences etc. Although the student must complete the formal requirements for graduation, nevertheless there are frequently many opportunities to further one's interest in a particular area of specialization.

Some universities have attempted to prepare graduating students for the transition from the university environment to the demands of the working world, through special courses. In 1981, a survey was made of universities offering a 'professional issues' course. Of the 97 responding, two-thirds indicated that they provided no special training in this area. A student's decision to specialize is undoubtedly influenced by the amount of information received regarding issues which are directly relevant to the work environment. The authors have described in considerable detail the structuring of the course and the materials covered. (Cunningham, D.,Lingwall,J., Steckol, K., Baker, B., Gore.,L., 1981)

For the professional already in the field, a number of factors previously discussed, such as job experience, population served, etc., may promote specialization. The ancient adage. nothing succeeds like success, is certainly applicable. A clinician who relates well, works well, enjoys and is successful with a certain population, would be strongly encouraged to concentrate in that particular area. Obviously, interest and enthusiasm alone are not sufficient to qualify for specialty certification. But it does provide the motivation to seek additional training, to develop greater clinical expertise, all of which would be applicable to specialty certification. Continuing education provides a logical vehicle for advanced study in specialized areas. There are a number of major variables which must be considered in developing effective programs in continuing education. A model effort to collect information on this subject is "A Study of the Continuing Professional Education Needs of Speech-Language Pathologists and Audiologists in the State of Illinois.' by Erickson, J., Dengler, P., Fairbanks, N. and Pryor, B. in Asha, 2, pp. 101-110 (1979)

In summary, as to when specialization begins, it appears most logical that it begins at several points: a) when a person before, during or after training, makes a personal and professional commitment to focus on a specialized area, and b) when a student, by design, begins to meet the formal requirements for specialty certification, as outlined in the accompanying report on specialty certification. Presumably, this would be the education, training and experience that is substantially beyond that required for a Certificate of Clinical Competence. Obviously a) and b) cannot be sharply differentiated because all knowledge and experience which relates in some way to the area of specialization, is relevant, regardless of the time when it was first acquired.

2. Do we need both generalists and specialists?

If we continue to have generalists by education and specialists by vocation, with or without formal recognition, then the question is no longer hypothetical. The implications of the question, however, can be explored by rephrasing it into a number of other questions, such as:

a) Is the public best served by the availability of both generalists and specialists?

b) If the answer to question a) is in the affirmative, would this have an impact on the training institutions in preparing personnel to enter the field?

If the proposed plan for specialty certification was adopted (or some similar plan), there would then come into existence, specialists who could be identified by appropriate titles. (Yellow Pages of the telephone directory: Mary Livingston, M.A. Licensed Audiologist, ASHA CCC-A, Specialty Certification in Pediatric Audiology). A hospital might advertise that a position was available in Asha: Speech-Lang Path: Head clinician in multi-disciplinary clinic in large urban hospital, PhD. CERT-SP, Clin. Spec. Child Lang. Dis.

The usual channels for the dissemination of such information, such as professional directories, etc. would also be used, which would identify those persons within a given community who possessed competence in a specialized area, as determined by the criteria established by the Council on Professional Standards in Speech-Language Pathology and Audiology (COPS). Although members of the profession would (or should) be most knowledgeable about the meaning of specialty certification, one can only speculate about the impact that it would make on other professionals and the public at large. It is the writer's impression that increasingly the public (or at least larger segments of the public) have become aware of the fact that speech-language pathologists and audiologists exist and provide services to the communicatively handicapped. The concept of CCC-SP and CCC-A is certainly not understood, except by those who operate in a setting where professional qualifications are important. The label "Specialty Certification in Aphasiology" does have an impressive sound to it, even if the reader isn't sure what 'aphasiology' is. 'Board certified' has even greater possibilities of being creditable, at least among members of the medical profession.

The point that is being made, perhaps too lightheartedly, is that the issuance of specialty certification will probably have little public recognition or impact, at least initially. Its value would appear to lie more in the professional domain. A specialist could be used as a referral source for clients, whose special or complex problems require more than the usual expertise for assessment and remediation. A specialist could be available for consultation on certain cases, even though the provision of continuing services would not be required. An employing agency which requires the services of a specialist in an area of recognized specialization could more readily locate qualified professionals. With the proper explanation of the meaning of the label "specialty certification," it is probable that the testimony or evidence provided by a certified specialist would be more creditable in a court of law or a public hearing. Finally, the availability of specialty certification provides those who are qualified by professional experience and expertise, the opportunity to be formally recognized.

Although the provisions of services to a select population within a particular job setting, tends to narrow the focus of a professional's interests in the direction of specialization, it is unlikely that for most, their professional activities will qualify them for specialty certification. It is unlikely, for example, that specialty certification would be so broadly defined as "specialty certification in public schools" or "specialty certification in private practice" or "specialty certification in hearing testing." In earlier discussion, specialization was used to refer to the knowledge which had to be acquired in order to function in a particular work setting, and the expertise which had to be developed in order to serve the communicatively handicapped population in that setting. In some instances, services would be concentrated and intensive, and might eventually, lead to specialty certification. Most job assignments however, involve a wider range of cases of varying ages, and probably would not provide the conditions which would lead naturally into specialty certification.

For a number of compelling reasons, it would be to the disadvantage of both the public and the profession to assume that 'specialization' is the last, best step in our professional evolution. In her usual lucid way, Reeshas placed specialization and generalization in perspective:

> "As a profession we have done what professions (and other segments of society) seem to do almost automatically: specialize. Specialization seems to be inevitable as knowledge grows in amount and complexity and it takes years to understand just one segment of one corner of the field in any meaningful depth. The price we all pay for specialization is that we become increasingly encapsulated in our own little segment and decreasingly able to interact with or even understand the members of other segments.
>
> It seems then that while many forces promote specialization, survival in the biological and social sense requires something else as well: adaptability.
>
> Most emphatically, I do not mean that we should train our students to know a little bit about everything.
>
> I have in mind instead the adaptability that comes only from a real grasp of fundamentals. Professionals in speech and hearing solidly trained in basic principles and processes of human communication and its disorders will not only be able to adapt to changes in information and societal trends, if I am right they will be the ones who create that information and produce those societal trends." (Rees, 1979 pp.996-997)

If the training institutions are preparing "generalists' in the best sense of the word, and the work environments enable professionals to focus and channel their interests in appropriate directions, then formal academic training and professional experience complement and reinforce one another. They provide the best of both worlds: a) the opportunity to develop a deep appreciation for the complex, inter-related, internal and external processes involved in human communication, b) an understanding of the consequences of disruptions in human communication, and c) the opportunity to acquire knowledge and skill in assisting human beings to solve the problems of their disordered communication.

3. What is the common core of knowledge and skill on which specialization may be based?

A discussion of this question will be brief, because much that has already been presented elsewhere is relevant here. Certainly the requirements already established for ASHA CCC are appropriate. However, in examining the results of the surveys conducted as a part of the Professional Self Study, a number of disturbing findings emerge. Several areas emerge which deserve special attention. One area concerned communication with parents and families. Practitioners, supervisors and directors considered this an area of high competency for students they had trained. Members of the Regional Study Groups believed that a significant service need existed. Some members of the profession may regard communicating and working with parents as a "specialized" skill. At a deeper, conceptual level, however, knowledge about parent-child and family relationships and skill in working with parents and families should be considered a "core" subject for all persons working in the profession.

It has been only recently that professionals concerned with the study of language acquisition and disorders in children, have turned their attention from the study of the structure of language, as important as that is, and become increasingly aware that human communication has meaning only in the context in which it takes place. Because the family is the child's natural environment, the study of children's language, both normal and disordered, must include consideration at some point, of family interactions and family communication between and among its members. For a discussion of the current status of language training in the training institutions, refer to Muma, 1979.

An identical concern can be expressed regarding the perceived competency by practitioners, supervisors and directors, regarding communicating with clients, with a perceived discrepancy in this area by members of the Regional Task Force. This critical issue deserves a great deal more research. But it should be cause for concern, that professionals committed to human communication may be having problems in communicating with the very people they are serving.

Perhaps our current preoccupation with maneuvering our clients through a sequence of clinician-established behavioral objectives, has caused us to lose sight of the primary purpose of human communication. It may be one of the prices paid for 'specialization' at the expense of 'the adaptability that comes only with a real grasp of the fundamentals.'

In summary, the positionhas been taken that there exists a common core of knowledge about basic processes of human communication and disorders, which functions as the common denominator for the entire profession and provides the basis for training professionals. A 'generalist' employs basic concepts as a departure point for viewing human communication and its disorders in broad perspective. A 'specialist' begins with a thorough understanding of the core, moves from a 'generalist' broad perspective, to a more concentrated focus on a sharply defined area of clinical service, which demands knowledge in depth and the acquisition of exceptional clinical expertise

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Proposed Plan for Specialty Certification in Speech-Language Pathology and Audiology

developed by

The Specialty Certification Subcommittee of the
Council on Professional Standards in Speech-Language
Pathology and Audiology (COPS)

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July, 1980

Introduction

Specialty certification is intended to benefit the public by identifying professionals whose exceptional clinical expertise is needed by individuals with communication impairments that pose special treatment problems. It is awarded only to those professionals who:

1) have acquired education, training and experience that is substantially beyond that required for a Certificate of Clinical Competence, and

2) who devote a substantial proportion of their clinical practices to a specialty area.

Specialty certification is a voluntary procedure whereby professionals who hold Certificates of Clinical Competence (CCC) can seek formal recognition of their qualifications in a specialty. There is no intent to require specialty certification as a condition for practice by the standard's programs of the American-Speech-Language-Hearing Association. Further, there are no professional or legal requirements for CCC holders to obtain specialty certification in order to offer services in a specialty area.

396.

it. The Specialty Certification Study Subcommittee will include representatives of the applying professionals and other speech-language pathologists or audiologists whose expertise in the proposed specialty area is widely acknowledged. The Specialty Certification Study Subcommittee will evaluate the application by applying the same criteria utilized in establishing the initial list of specialty areas. After completing its evaluation the Study Subcommittee will provide the Specialty Certification Board with its recommendations concerning the proposed specialty area. If establishment of a new specialty area is recommended, the Specialty Certification Board will seek input from the Membership as part of its consideration of the subcommittee's report and prior to preparing a resolution for submission to the Executive Board. After due consideration, the Executive Board will forward the recommendation of the Specialty Certification Board to the Legislative Council with comments. (See Figure 2).

Establishing Standards of Specialty Certification

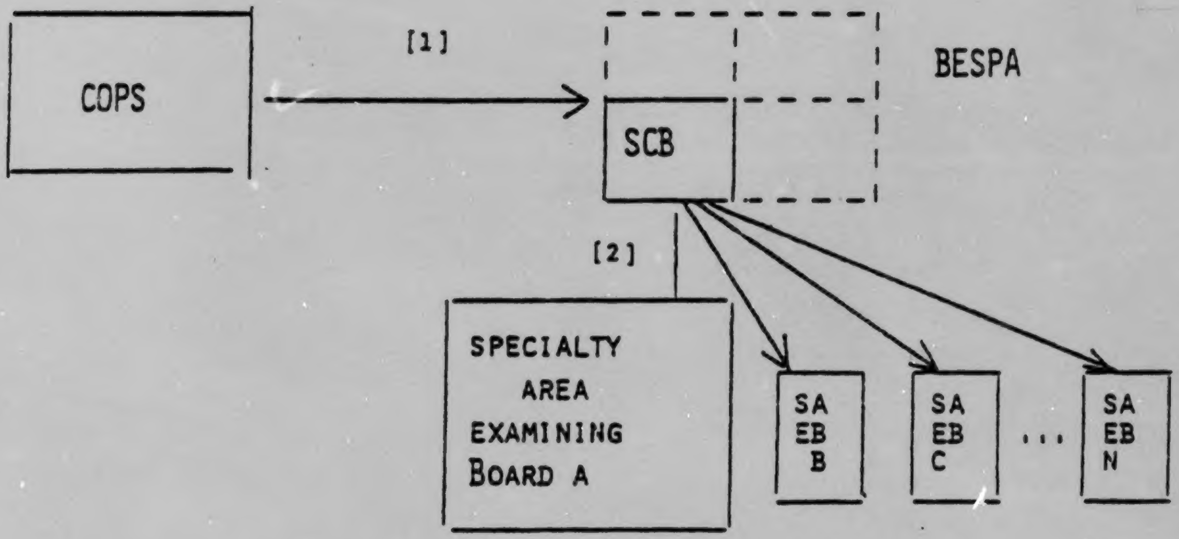
Once an area of specialty certification has been approved by the Legislative Council, the Executive Board will advise the Council on Professional Standards in Speech-Language Pathology and Audiology (COPS) that a new area of Specialty Certification has been established and will request that standards for the area be developed. COPS will establish standards for the specialty area utilizing the expertise of practicing professionals whose competencies in the specialty area are widely acknowledged. Standards for each specialty will include requirements in each of the following:

1. Professional experience in the specialty area.
2. Clinical skills in the specialty area.
3. Scientific knowledge in the specialty area.

The specific nature and distribution of the requirements may vary as a function of the specialty area for which the certificate is awarded. Specialty certificates will be valid only for specified periods of time, and renewal of such certificates will require evidence of continued activity that contributes to the professional's skills and knowledge in the specialty. The Executive Board will be informed of the standards for certification and conditions for renewal so that a formal announcement of the availability of specialty certificates in the new area can be made and members of a Specialty Certification Examining Board for the area appointed. Each Specialty Certification Examining Board will establish and administer examination procedures for the award and for renewal of its specialty certificate. (See Figure 3)

Figure 3.

Flow Chart for Standards Development & Implementation for Each Specialty Area.


COPS
[1]
BESPA
SCB
[2]
SPECIALTY AREA EXAMINING BOARD A
SA EB B
SA EB C
...
SA EB N

PRO

1. Specialty certification, as defined in the plan proposed by the Ad Hoc Committee on Specialty Certification, provides a mechanism for recognizing exceptional expertise in a specific area of practice without interfering with recognition and acceptance of the CCC as the required credential for practice.

2. The proposed plan for specialty certification requires that all candidates for this credential first complete the broad, generic background of training required for the CCC. The optional specialty credential would have as its base a broad-based knowledge of human communication and its disorders and therefore would not fragment the profession.

3. The Ad Hoc Committee on a Single Profession and Its Credentialing concluded that specialty credentialing, as defined in the report of the Ad Hoc Committee on Specialty Certification, could be applied to the model of a single profession with two designated areas of practice: Speech-Language Pathology and Audiology.

4. The availability of a credential recognizing special expertise may motivate individuals to acquire knowledge and skills beyond those necessary for obtaining the CCC.

5. Persons with communication handicaps which pose special treatment problems should benefit from being able to identify practitioners who have exceptional expertise in treating their particular disorder.

6. In practice, many speech-language pathologists and audiologists specialize in management of certain types of disorders of communication. Having a credential by which this special expertise is recognized would be useful to referral sources as well as to consumers.

CON

1. The existence of a specialty credential could lead to the concept that only persons with specialty certification in an area are qualified to work in that area.

2. Voluntary programs sometimes become the standard of practice and, eventually, they may become mandatory.

3. Physicians presently find that their hospital privileges are limited and constrained to practices and procedures for which they are certified by specialty boards. The same could happen in our field.

4. If specialty certification is made available, the performance of a procedure without such specialty certification could have serious malpractice implications.

ISSUE # 8

The Role of Continuing Professional Education...

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ISSUE # 8

What should be the role of continuing professional education in meeting the full range of needs of faculty, clinical service providers, administrators, and scientists in human communication and its disorders?

a. How should continuing professional education relate to programs of graduate education?

b. What kinds of information and skills are better suited to continuing education programs than to graduate professional education?

Introduction - Background

The continuing competence of the certified members of the American-Speech-Language-Hearing Association is a subject almost certain to receive increasing attention as the 1980's progress. Creating viable mechanisms to promote or assure the continuing competence of the ASHA CCC-holders is a challenge to the respective members of our profession and will also have an impact on other regulatory agencies, consumers, and the communicatively handicapped.

The National Commission for Health Certifying Agencies, a voluntary organization involved in establishing standards for and promoting the use of certification based on competence, has recommended that the private sector must become more actively involved in occupational regulation. If the federal government is allowed to act alone to establish standards for reimbursing and recognizing health professions, the resulting regulatory system is likely to be unrealistic, inefficient, unresponsive to innovation, and intrusive on the constitutional prerogatives of states to regulate health-care and safety within their borders. Conversely, if the matter is relegated solely to the states, interstate differences will impede mobility and generate confusion, fiscal problems will inhibit growth, the possibility of continuity of credentials among states will be remote, and inter-professional disputes will surface repeatedly within the political and regulatory arenas. More importantly, regulation of any kind stands little chance of success unless it has the active cooperation of the group it is designed to regulate.

If they should choose to do so, health-care professional organizations among the private sector could, no doubt, master sufficient political and economic clout to stave off the establishment of continuing competence assurances mechanisms. To do this, in my personal opinion, would be counter-productive and irresponsible. The rapid growth of information and technological advances in health-care in the recent years has been too extensive to render tenable the proposition that competence at the time of entry into a profession is sufficient to assure competence throughout one's career.

Professional competence requires the synthesis of skill, knowledge, and performance. The ability of an individual to transform learning into effective and appropriate action is demonstrated evidence of such competence. It should be noted, however, that the issue of competence resembles a double-edged sword. First, there is the question of initial competence, that is the competence of the individual at the time of entry into practice, and secondly, the matter of continued competence.

The credentialing process of health-care organizations, be they federal, state, or private is intended to assure the public that minimum standards of competence have been achieved. Let us not be fooled - it is not an assurance of excellence. An authorization to practice a regulated occupation is not a guarantee that the practitioner is among the most competent in the profession. It is recognized only that the practitioner has met standards established by the regulatory authority as a prerequisite to practicing the profession.

In the ASHA, entry level competence requires the meeting of minimum standards of education, experience, and examination of performance - Master's degree, CFY, and NESPA. Any system of regulation and/or credentialing which accommodates this three-pronged linkage is more likely to assure the public that established minimum competence exists. Frequently, associations are set up to establish and maintain standards in one or more of these areas but seldom all three.

However, beyond initial competence and entry into a profession, there has become a widespread recognition of a need for at least equal emphasis on continued competence. As health-care professionals we can no longer perpetuate the self-serving myth that "once certified means forever competent." We are at the age of requiring periodic reassessment of competence in some manner for continued practice in the profession of speech-language pathology and audiology.

Continuing education, which is only one of several methods of promoting quality assurance refers to learning which occurs after one's formal education. It is an issue to be considered once the initial entry-level skills have been achieved and builds on the knowledge acquired for career entry. As such, it normally excludes learning which is applicable to a formal entry degree or certificate. Continuing education relates directly to professional competence by improving skills through knowledge reinforcement, mastery of recent developments, and through the review of new trends.

One must understand, however, that continuing education can mean different things to different people. The distinction between two types of continuing education must be clearly understood:

(1) CE programs which are designed to assure that health-care practitioners maintain performance at a basic level of professional competence; and

(2) CE programs which are designed to assist professionals in advancing their training and specialization beyond that required at the basic professional level.

It is also important to realize that assuring continuing competence is not the same as evaluating it. Assurance requires that a mechanism be established to define and control designations of competence for a particular professional practice. The evaluation of competence involves measurement and some form of examination.

Methods for Promoting or Assuring Continuing Competence

Continuing Education

CE is the best known and most frequently employed means of attempting to promote or assure continuing competence. The terms of continuing education and continuing competence are so closely identified that they are often used interchangeably (Broski, 1979). To avoid such confusion, it's appropriate to recall some alternative methods of promoting or assuring continuing competence such as peer review, performance audits, supervisory assessments, and re-examination.

With mandatory continuing education increasing, one may legitimately question the outcome of participation in such programs. Is knowledge related to practice measurably increased? Are skills improved? Do patients receive better care? A review of the available literature on the efficacy of continuing education leaves one with an unmistakable sense of uncertainty. The definitive study(ies) with irrefutable as well as generalizable results have yet to be done and the widely scattered data available leads mostly to confusion - not to understanding.

In view of the explosion of health-care knowledge and technology, it is surprising that only minimal attention has been paid to the advisability of requiring health-care practitioners to keep abreast of advances in their professions. In 1947, the American Academy of General Medical Practice became concerned about the possible obsolescence of its members as practitioners. In the same year they established a rule requiring its members to participate in continuing education in order to remain members in-good-standing. It was not until 1967 that the Oregon Medical Association amended its by-laws to require continuing education for maintenance of membership. However, within a year, 17 other states followed Oregon's lead (Falk, et al., 1981).

During this time other regulatory agencies began to express concerns about continuing education. One of these agencies, the Department of Health, Education, and Welfare voiced its concern regarding a Medical Manpower report by stating: "The typical state requirements may provide adequate safeguards at the initial entry into a profession. It is a considerably less effective guarantee, however, against the growing problem of obsolescence" (Dept. HEW, 1971).

In 1971, New Mexico became the first state to pass and implement a law linking continuing medical education with the re-registration of licenses. Subsequently, 25 other states have passed similar laws (Falk, et al., 1981).

There are organizations other than ASHA that have questioned mandatory continuing education. Many health-care educators have expressed a growing concern that continuing education is ineffectual and that no studies have conclusively demonstrated that participation in continuing education improves patient care or changes the habits of practice.

A classic study in 1970 of Kansas physicians spanning ten years indicated no correlation between perinatal death rate and continuing education courses in pediatrics and obstetrics. The authors believed that this was a strong indictment against the advanced learning process - mitigated perhaps by the largely social etiology of low birth weight and related complications of pregnancy (Lewis, C.E. and Hassahein, R.S., 1970).

Several other articles also report discouraging accounts of continuing education. Miller (1963) reported failure of continuing education to rectify practitioner habits. He concluded that if learning had occurred, it was not translated into improved practice. The same author (Miller, 1967) reported the repeated failure of participation in traditional continuing education programs to modify the inappropriate practice habits of physicians.

Dr. Cyril Houle (Falk et al., 1981), professor of education at the University of Chicago and leading researcher in this field states that the continuing education movement was borne out of an eager directiveness and naive faith; however, the "enrollment criterion" to assure continued competence simply does not work and the unknowing public is given nothing but a placebo. He adds that there is little, if any, evidence to support the contention that mandatory continuing education has improved the delivery of services. The hypothesis that attendance or participation in a formal program equates with learning and that the application of such learning is directly related to practice is unproven. It is at best suspect.

Despite these reports there are those who promote continuing education as an effective means in increasing as well as assuring continuing competence. Rubenstein (1973), in a rather elaborate chart audit study discovered that there was widespread misuse of blood banks by physicians at a university. The members of the Stanford Continuing Education Department subsequently delivered an intensive lecture series of "Back-to-Medical School" core curricula on the proper use of blood and its components. They later conducted a second audit which revealed a significant improvement in the use of blood and furthermore, the improvement in practice was also demonstrated on a third audit one year later. The conclusions demonstrated from this investigation indicate that specific types of medical practice can be positively influenced by participation in a formal CE program.

Similar results were obtained by Mahon (1978) and Talley (1978). The two studies found that those who participated in continuing education courses which were tailored to a particular and narrow objective, that is, increasing the number of cancer referrals and a method for increased pressure monitoring demonstrated the benefits of continuing education participation.

For those who choose to view continuing education equivocally one can review the literature and find consensus in those studies with inconclusive results. Research conducted in Texas attempted to discern nurses' attitudes following participation in ten different continuing education activities over a period of one year. Performance changes as well as cost-effectiveness also were evaluated. The results were inconclusive (Deets, C & Blume D, 1977).

A comprehensive overview of continuing education research has been published by Lloyd and Abrahamson (1979). These authors reviewed 47 studies published since 1960. The results were categorized according to physicians competence (capability), practitioner performance, and patient health status. Among those studies reviewed, the authors found various shortcomings: the absence of control groups, discrepancies between initial and follow-up reports, and the absence of any type of long term assessment, etc. The authors concluded that overall, the evidence accumulated on continuing education research partially satisfies all points of view: participation in continuing education apparently resulted in improved practitioner performance, competence, or patient health status in approximately 50 percent of the studies reviewed.

Whether or not continuing education is to be mandatory or voluntary and the effects thereof is a debatable issue. Like the ASHA, the AMA and other professional organizations believe in continuing education; however, they have questioned the mandatory approach. Yet, like our own Association, most professional groups have not faced the problem of life-long certification and have made no overt suggestions on how to resolve the problem. Possibly all are satisfied with a status quo that broaches neither educational nor political problems.

Many individuals who participate in continued education, almost with an air of triumph, continue to ask such well-worn questions as "How do you know that I just didn't sign in for the course and then immediately head for the bar" and "Can you prove that participants get anything out of the course when they sleep through lectures." We all know, that in any profession there are a certain number of cheaters about whom we can do nothing short of herding them into a lecture hall and locking the doors.

The individuals who choose to do this will find a way to win with almost any system. One can speculate whether or not these are the same individuals who have problems in completing their academic curriculum, the CFY, and passing the NESPA. We can do nothing with them except leave them alone. I personally believe this number to be extremely small and to devise elaborate policing activities for these individuals would not be cost-effective. In response to the second question, perhaps if audiences sleep, the presentor should consider a change in format and/or manner of presentation - to depart from the stereotypical lecture or platform presentation.

There is also a tendency among many individuals to participate vigorously in many continuing education activities as though they were "stars-in-the-crown" to be attained by all conscientious health-care professionals. This "race to the top" or "gathering of chits" is most unfortunate. The appropriate perspective is that continuing education is merely a tool to be used to ensure practitioner competence while concomitantly improving the quality of patient care. Although it is laudable to realize that one's education is never complete, the ultimate goals of improving health care delivery must remain the essential goal of continuing education. Continuing education must be designed and evaluated with this goal in mind rather than merely fulfilling one's yearly quota of containing education requirements.

Peer Review

Peer assessment has also been considered to be an alternative or adjunct approach to continuing competence. Little information is available regarding the validity and reliability of this method of assuring continuing competence. While this procedure may have some face validity, Dr. Christine McGuire (Falk et al., 1981) at the Center for Educational Development, University of Chicago Medical Center has shown that peer judgements are often at odds with one another and that most peer reviews have been directed more toward cost containment than to issues of competence. To make matters worse, peer review often equates continuing competence with the length of stay in a health-care facility or the costs of services for outpatient programs. There are obvious problems regarding logistics of this type of evaluation; personnel to provide the review, how peer reviews may interface with various types of employment, establishing the pass/fail criteria to be applicable to all groups, etc. This concept, although granted its use has been less than successful in evaluating continuing competence, merits further consideration and development for speech, language, and hearing professionals.

Testing or Re-examination

Testing as a measure of demonstrating or promoting continuing competence is now a reality among many health-care organizations including our own. It conveys the most face validity and if properly organized, yields the maximum information with minimal costs. The traditional "questions and answers" are the most common measurement tools currently employed. They are, however, the most threatening to individual participants as a method of demonstrating continuing competence. Other procedures such as self-assessment programs, programs utilizing patient management problems, as well as other types of re-evaluation procedures, both mandatory and voluntary are now in existence. Basic to the success of any re-evaluation program is the detailed and meticulous development of self-assessment tools to assist the credentialed practitioner who needs to learn of his/her areas of deficiency and what might be done to alleviate them. Moreover, once the assessment tool has been developed, there needs to be some translation of the self-assessment into performance and hence into methods of acquiring continuing competence.

Sanctioning

Another, yet untried and not fully developed approach at attempting to assure continuing competence considers the fact that most credentialed persons tend to narrow their scopes of practice over the years. Many individuals, especially those involved in health-care as well as speech-language pathologists and audiologists move into specialty practice - either by area of interest or by employment demands. Nevertheless, their certification to practice remains generic, despite the fact that their generic knowledge and skills may be outdated years earlier and their competence in certain areas may have diminished greatly. With the development of a recertification procedure in a designated specialty area and with the development of appropriate self-assessment inventories, practitioners with specialized areas of expertise might be re-certified to continue a limited scope of practice without being re-certified for practice in other areas. One might envision a generic credential that may include periodic re-examination. Within such a system, an individual may choose to limit practice and either voluntarily or by agency demand place a sanction on the original credential. This sanction or limitation would be based on the individual's performance on one of the self-assessment tools and/or other evaluation criteria. The sanction in effect, would limit their scope of practice to areas in which continuing competence could be demonstrated. At any time during the individual's professional career, the practitioner so limited could be re-instated to practice in areas previously sanctioned by demonstrating competence in those areas.

For practitioners who choose not to limit their scope of practice voluntarily, sanctions would be applied when the periodic assessment or other evaluation tools yielded results less than the established minimum standards for competent practice. These sanctions too could be removed upon later demonstrating competence in the areas of deficiency. Meanwhile practice would continue only in those areas of demonstrated competence. Each individual would have the choice of whether to seek full re-instatement of the original credential or to continue in a more limited scope of practice.

Of all the plans to assure continuing competence this has the potential of being the most costly and most administratively complex, yet it includes exactly that which concerns the practitioner, the regulatory agencies, the consumer, and the communicatively handicapped - the actual demonstration of continuing competence in speech-language pathology and/or audiology. This concept merits further investigation.

There are several other methods which attempt to promote or assure continuing competence which are not as popular or as well developed as those previously discussed. There is also the possibility of combining one or more of these procedures to fit the particular needs of the ASHA.

This is the age of the consumer and the litigant. To both of these groups certified speech-language pathologists and audiologists must offer assurance not only of initial competence but also of continuing competence.

Some Legal Consideration for Promoting or Assuring Continuing Competence

As a part of your deliberations, I would like to present to you some selected legal considerations in continuing competence as summarized from attorney, Mr. Nathan Hersey, noted professor of health law (Falk, et al., 1981).

He indicates that the requirements for re-certification, in order to survive the legal tests brought by those who do not meet these requirements, not only must be rooted firmly in the knowledge, skill, or characteristics needed for an individual's actual on-the-job performance, but also must be no harsher than the requirements for initial certification. This is because, although it may not be explicit in the law in many cases, it is generally perceived to be more harmful to take away something from a person that has already been granted to them rather than to refuse to grant them something that they initially seek. For example, it would appear that for initial certification, the individual has the burden of demonstrating that he/she has met the basic requirements. After a period of time has elapsed and continuing competence is considered, the burden then shifts to those who conduct the approval process to show why the individual is no longer deserving of the mantle of certification.

Mr. Hershey suggests the following scenario to illustrate his point. Consider the case of an individual who has received certification based in part on the successful completion of an examination. Assume that the examination was determined to be both valid and reliable and that no serious questions could be entertained with respect to its serving the purpose for which it was intended. The newly certified individual now seeks employment in a health-care institution. The institutions' personnel department reviews the application and notes that the applicant has been certified in the area for which employment is available. Subsequently the individual is hired. The individual's performance on the job is adequate and the individual has been granted pay raises during the course of employment because of satisfactory performance. Also assume that initially or later - it makes no difference - that it was written into the personnel position qualification that the person who holds the position must be certified. After a period of time has lapsed, the individual now needs to demonstrate some method of continuing competence for recertification. The employee submits to the competence determination process and is notified that he/she has not met the requirements and will not retain current certification status.

Now the scenario rapidly becomes complex. We now face the questions regarding not only the responsibility of the certifying agency but also the relationship between its role and the continued employment of the individual by the employer. Obviously, health-care organizations represented at various health facilities want their credential(s) to be utilized; such recognition makes certification important. However, we see that this importance has a price - that of added responsibility.

If the employing institution learns that the individual has failed to maintain certification status, the employer then must decide whether to terminate the employee, even though performance on the job has been satisfactory. If the employee is terminated or even threatened with termination, we have a most unhappy individual who is likely to seek legal assistance. He/she would probably be advised by an attorney to determine what appeal procedures are provided by the certifying agency and the attorney would assist that individual in following them and on and on.

The implications of this scenario are obvious. Mr. Hershey suggests that once an individual is employed and has produced a record of job performance, there is no doubt that performance rather than anything a certifying agency may issue, is appropriate for maintenance of employment.

Although it may be a quantum jump, it might not be unlikely for a court to look into the question of termination of an employee because he/she has lost certification when the evaluative process to determine "continued competence" was different from the test or other evaluation procedures used for new entrants into the areas of activity for which certification is granted.

In conclusion, an employee who successfully completed the hurdles for initial certification may have a very good argument if he/she is denied certification or continued employment because he/she has not passed the hurdles of continued competence in order to maintain certification.

An interesting note, taken from one piece of information found in the ASHA Master Report of Surveys and Discrepancies, is that theCCC-Sp rate job experience as the first source of training for 19 of the 38 skills and academic or practicum as the first source of training for only 13 of the 38 skills. CCC-A rate job experience as the first source of training in 20 of the 38 skills and rate academic training as the first source of skills in only 8 of the 38 skills (ASHA, 1982).

This hypothetical, yet realistic case, is presented to serve only as an example. Mr. Hershey's comments are general and perhaps not totally applicable to the ASHA. One can imagine, however, other ramifications and the complexities of litigation. These problems, however, should serve only as a warning and not deter our Association in taking active and positive steps to promote or assure continuing competence.

Continuing Competence and the Professional Self-Study Project

In reviewing the document entitled Professional Self-Study Project, Master Report of Surveys and Discrepancies, I bring several items to your attention for consideration. These issues are not meant to be inclusive as the reader has access to this report.

As previously mentioned there are two broad categories of continuing education activities:

-- CE programs which are clearly designed to maintain performance at a basic level of professional competence, and;

-- CE programs which are designed to assist the professional obtain advanced training and specialized skills beyond those required at the basic level.

With this delineation in mind, I draw your attention to the following items in the report.

1) Few certified and uncertified practitioners feel highly competent in using contemporary technology, managing finances, and working with the bilingual/bicultural population (ASHA, 1982).

2) The CCC-Sp show a regular progression towards higher self-perceived competence with increased years of experience on 12 of 38 skills while the CCC-A demonstrates such on 17 of 38 skills (ASHA, 1982).

If any of the skills mentioned in #1 are those which are gathered with continuing years of experience as mentioned in #2, what is the impact on quality service during the intervening years to the communicatively handicapped? If one believes that "few certified and uncertified practitioners feel highly competent in using these skills" is an actual fact and not a false perception, perhaps the knowledge needed to use these skills was not acquired during the pre-professional training program. If this is so, should continuing education programs be designed to immediately assist the professional in obtaining advanced or specialized skills beyond those required at the basic level or is this discrepancy something that "we live with" or that "comes with the job"?

It should be noted that in the discrepancies between the practitioner competence and service needs, the practitioners rated themselves as having low competence in the use of contemporary technology but also indicated that they used the contemporary technology infrequently (ASHA, 1982). It is interesting to speculate whether or not the ranking is low because they actually use it infrequently or perceive themselves as using it infrequently; or is the ranking low because they do not know how to use it or apply it and thus use it infrequently.

3) Self-ratings for CCC-Sp and CCC-A employed in university and non-university clinic/hospital settings and private practice are significantly higher for more skills than those employed in the schools (ASHA, 1982).

4) Clinical Supervisors of the Professional Staff likewise rate CCC-Sp and CCC-A employed in the schools as having lower competencies than those in other settings (ASHA, 1982).

Does this mean that all employment environments have essentially the same competencies and those in the schools merely perceive themselves as having lower levels of competence? Is the ranking given by the Clinical Supervisors of Professional Staff a real difference in competence or is it a perceived difference on the part of the Clinical Supervisors? Is it also possible that the schools are ranked lower and their self-perception rankings are lower because they actually participate and use fewer of the 38 identified skills? Or, does this mean that within our Association there is more than one level of competence and if so, what is the effect of multiple levels in the provision of quality services? If the latter statement is true, does this also mean that continuing education programs should be designed for advanced training and specialized skills by assisting those professionals with lower competencies immediately upon obtaining their CCC's? If so, should such CE programs be mandatory? If so, could these continuing education programs be incorporated into a post-CFY experience? If so, should ASHA break away from the traditional continuing education model (CE referring to learning that is acquired after one's formal education) and establish some other specialized education program as a portion of the initial competence requirements? If so, doesn't this really mean that for those who seek employment in the schools or who are already employed in the schools, the basic educational requirements will be extended until such time that the individual is able to demonstrate competence at least equal to those found among university, private practice, and in non-university settings? If so, how will this continuing competence be demonstrated? If so, what will happen to those who fail to reach this level of continued competence? If so, what will be the effect in the numbers of individuals who choose to seek employment in the schools?

I will not bore the reader with reiterating all that is available to him/her by reading the Master Report on Surveys and Discrepancies. Suffice it to say, however, that a majority of the identified training and service needs, although not specifically designated so, are areas of information that are applicable and could be obtained by participation in a formal organized continuing education program. I mention a few for your information: understanding the scientific method; counseling principles and procedures; providing effective education, guidance, and counseling to parents; establishing a more effective high risk registry for infants and adults, improving competence with age specific identification instruments;

increasing competency with instruments which identify fluency, voice, and motor-speech disorders; utilizing valid, reliable, and appropriate assessment methods and tools; the development of criteria for initiating and terminating service, etc.

Discussion and Questions to be Resolved

As mentioned previously, professional competence requires the synthesis of skill, knowledge, and performance and it is the ability of the individual to transform learning into effective and appropriate actions as to demonstrate this competence. The issues brought forth from the Master Report of Survey and Discrepancies clearly spell out the message as reported by our colleagues and others - that we can no longer perpetuate the self-serving myth that "once certified means forever competent." We are fortunate, however, that the message comes from those close to us rather than from an outside regulatory agency. We are now in a position to take some positive steps to upgrade services to the communicatively handicapped by actively demonstrating some form of continuing competence.

The topic assigned to this presenter is, "What should be the role of continuing professional education in meeting the full range of needs of faculty, clinical service providers, administrators, and scientists in human communication and its disorders." My position is that before that statement can be properly addressed, the profession must make other philosophical decisions and study the ramifications thereof. Our Association has taken the positive position from the CE literature and believes that participation in continuing education does positively influence service delivery. However, this is only an assumption. We have no demonstrable objective evidence to that effect. I am reminded of the question of validity of our current standards for CCC and the lack of objective data. Do we, as an Association, wish to pause and reflect and perhaps validate that which has become so popular and so much in vogue? In several years will we find ourselves asking the same questions about continuing education that we now ask about certification?

The ASHA has clearly embarked on an extensive and elaborate plan for voluntary continuing education as a method of promoting or assuring continuing competence. The program which is less than three years old has approved 226 sponsors and has offered 1288 different activities to 16,769 individuals. This number of individuals has made 35,135 entries into the National Registry. Additionally, it is one of the few programs within our Association that has the potential for generating income. We are at the point, however, that considerable time and thought must be directed towards the further growth and direction of our continuing education program. Answers to questions such as these must be decided before any more progress is made.

(1) Do we wish to continue with such a continuing education program?

(2) Should it be made mandatory for all CCC holders? (It will remind the reader of the legal constraints of making such a program mandatory for current CCC holders. Usually, mandatory programs such as this have a provision for "grandfathering" current certificate holders who meet specified guidelines).

(3) Does participation in a voluntary or mandatory program of continuing education promote, assure, or only attempt to assure the continuing competence of our CCC holders?

(4) Will a voluntary continuing education program eventually evolve into a mandatory one and if so, what will be the effects on those who choose not to participate initially?

(5) Does mandatory participation promote or assure continuing competence better than a voluntary program?

(6) Should the ASHA halt their continuing education program and leave it to the discretion of federal or other regulatory agencies?

(7) Should the ASHA stop the continuing education program and recommend that it be a part of the regulatory process at the state level?

(8) If the continuing education program is relegated to the state level, what will be the value of our current CCC?

(9) Will we be CCC holders for life?

(10) Do we wish to ignore the whole issue of a life-long credential?

(11) How will the issue of continuing competence be handled in those states that have no recognized system of regulation or in those states where the sunset provision has abolished regulatory agencies?

(12) What are the legal ramifications of these questions?

(13) How much will it cost?

(14) What is the real effect on the communicatively handicapped?

(15) Is a continuing competence program self-serving for our profession and does it have little bearing on service delivery?

At this point in the discussion paper, I am sure the reader understands that there is no clear resolution to many of the questions posed, that there are no definitive studies to quote, and that the direction for future planning and/or verification of continuing competence rests with each of you.

I have a strong personal belief that the major issues previously presented should be resolved prior to discussion on the specific topic assigned this presenter. I would be remiss, however, if I did not take the opportunity to briefly discuss Graduate Education vs. Continuing Education and the different kinds of educational activities that are appropriate for various employment settings.

Graduate Education vs. Continuing Education

As never before, the entire field of education is in a climate of continual change. The acquisition of educational credentials has improved employment opportunities and has meant advancement for many individuals. Professionals who have already earned credentials find it beneficial to upgrade their skills or to add to their knowledge in the light of the changing technology and a more competitive job market.

It is understood that both Graduate and Continuing Education embrace a variety of service delivery models, serve many different people in various employment settings, and are utilized by all major professions in our society. The boundaries defining "Graduate and Continuing Education" have become obscured over the years. Historically, graduate education in speech-language pathology and audiology has connoted the offering of "academic and/or practicum" course experiences on college and university campuses to "students" - usually of a young age - as they prepare to enter the profession. Graduate education provides academic credits acceptable for a formal degree program. On the other hand, traditional continuing education activities have not usually been offered as a mechanism to satisfy the requirements for pre-service education but have been confined to short term (several days or hours), non-degree oriented, non-academic credit educational activities, offered at a variety of different locals.

Any discussion of the direct or implied relationship between graduate education and continuing education should consider these two factors:

(1) the determination of course content areas and academic levels that are appropriate for pre-professional education vs. content areas for post-graduate education and (2) the method(s) of service delivery. The content areas which are appropriate for both graduate education and continuing education must also be viewed as they relate to the ASHA's requirements for certification. Obviously, there is tremendous overlap between them.

As the ASHA continuing education program was formulated it became apparent that some traditional college level academic courses were acceptable and perhaps desirable forms of post-graduate or continuing education and should not be limited only to those individuals participating in pre-service or pre-professional training programs. The ASHA continuing education program recognized that for some individuals the most viable mechanism of participating in a program of promoting or assuring continuing competence was through enrollment in these academic courses. As such the CEB established a policy by which CCC holders may choose to enroll in academic courses offered by CEB Approved Sponsors and/or ETB programs. The only covenant was that enrollees must initially select whether or not they wish to receive CEUs or academic credits for the educational offering. Both are not applicable for the same activity.

Since June, 1980, the CEB has indicated that content areas in the sciences (as they pertain to speech-language pathology and/or audiology) and the contemporary practice of speech-language pathology and audiology are applicable for CEUs or academic credit. One can readily see that this broad definition of acceptability is also applicable to educational activities provided by graduate education programs that prepare individuals for entry into the profession. To try and categorize or to make a list of educational activities that are applicable for only graduate education and only for continuing education is, in my opinion, an exercise in futility. I would agree that such a list could probably be constructed and that there are indeed some courses that are more easily accessible and applicable to graduate education program rather than through continuing education activities and vice versa. But to establish territorial boundaries of "who" can offer "what" to "whom" is a confining, narrow, and self-serving approach to meeting the needs of the communicatively handicapped.

Traditional vs. Non-Traditional

Whether or not educational instruction is applicable for post-graduate education or continuing education should be moot. Sound educational programs regardless of the system of delivery should be judged on the ability to identify, assess, and formally recognize prior learning however it was provided. The concern should not be where people have learned but what they have learned. It is the content that is important.

The overlap that exists among course offerings in the content areas applicable to our profession will have tremendous impact on current graduate training programs and will result in increased competition for the learner and his/her dollar.

Education, however, is no longer the monopoly of the formal college or university training program. It belongs to whomever can offer consistent high quality educational activities that serve the needs of the individual and that are financially appropriate. We have already seen the development of high quality pre-service training programs in speech-language pathology and audiology in hospitals. Additionally, several practitioners have indicated that they intend to offer an "in-depth internship" learning experience. It is anticipated that within the next ten years there will exist a significant number of quality pre-professional graduate, and continuing education programs which are not part of the traditional college and/or university system as we currently know it.

Some Issues Influencing Adult Education

The blending or blurring of the lines separating traditional graduate education from continuing education have been influenced by a variety of issues: social, economic, regulatory, and technological. Each of these has given rise to a particular set of circumstances by which the individual evaluates and chooses educational activities. With the proper development of self-assessment tools that will allow the practitioner the opportunity to recognize his/her area(s) of deficiencies, the potential for educational participation is unlimited. One would hope that the end result of increased competition among educational providers would result in an upgrading of knowledge and competencies which would be passed on to the consumer -- the communicatively handicapped. But I fear that this may not be the case.

Speech-language pathologists and audiologists are like everyone else in today's society. They are a work-learn-spend-socialize breed in a rapidly changing technological world. The mature learner is one of these individuals and is becoming increasingly more attractive to post-secondary educational institutions for several reasons: First, adults constitute a large number of potential students. Mid-life career changes are becoming commonplace and no longer carry the social stigma they once did. Medical sciences are extending life expectancy and changes in retirement age are increasing productivity. It is interesting that since the implementation of the ASHA continuing education program (June, 1980) until December 31, 1982, 4,290 of the 16,769 who chose to receive CEUs were over the age of 40. Second, the adult learner is a capable and motivated student. Studies in adult education show that age may change the way one learns but not the capacity for learning. Mature students tend to be more goal oriented, more self-sufficient, and more diligent than younger ones. Third, mature adult learners introduce flexibility into a student population traditionally 18-24 years old and broaden the base for intellectual exchange. And, fourth, it is an interesting combination of finances, part-time enrollment, and continuing education. Enrollment at colleges and universities is decreasing significantly, and departments must assure a minimum number of students in order to retain faculty and facilities. Departments have now had the opportunity to see the numbers of individuals who are participating in continuing education activities and are eagerly inviting the CE department of their respective university to participate with them in the education of these students. Prior to 1955, part-time students or continuing education students were not counted as a portion of university rolls. Today, over three-fourths of the total enrollees at all colleges and universities are part-time, either enrolled in degree programs or in CE activities. New York University registers over 60,000 individuals per year in continuing education activities. Finances obviously, are also a significant factor in these changing statistics.

Federal, state, and professional regulatory influences will be a continuing political issue in graduate and continuing education. To date, 33 states have licensure laws for speech-language pathologists and audiologists. During their inception states established minimal educational requirements similar to ASHA-CCC. Some states have written the actual number of academic and practicum hours into their licensure bills.

Several states, who have fought so hard with their legislators and other politicians to secure licensure are now faced with the dilemma of what to do when the CCC requirements for ASHA change. Some of these licensure laws have also established regulations for continuing education. Currently the CEB is conducting a survey to determine the number and the specific CE requirements of state licensure laws. Requirements for teacher re-certification also indicate a need for flexibility among educational providers. Educational activities that may be applicable for teacher re-certification may not be applicable for licensure CE requirements and vice versa and neither of them may be applicable for participation in the ASHA continuing education program. Legislators and politicians do not understand what is happening. Growing political concerns stem around who will be allowed to offer what kinds of educational activities to whom.

Increased costs are shared by everyone. Graduate education programs are faced with energy costs, inflation, deteriorating physical facilities, and unrealistic tuition increases. Colleges and universities are being forced to accommodate the time, family, employment, and financial exigencies of the students. As the costs of attending residential colleges and universities increase, many students will choose less expensive educational alternatives. Can these needs be met with our traditional graduate education program? Is continuing education or a modification thereof an alternative to meeting educational needs? Will it be possible to combine pre-service delivery of education activities with other types of service deliveries to produce competent practitioners?

It is interesting to note that law and engineering professions require minimal entry level standards as well as methods to promote or assure continuing competence. Of those individuals who are participating in CE activities, one-half are gaining access to education sponsored by their professional organizations and societies rather than that provided by colleges and universities. Whether this relates to financial conditions, accessibility, quality instruction, or a combination of many factors is open to debate.

There can be little question regarding the impact of recent technological advances on education. Both the determination of appropriate content areas as well as the method of service delivery have been and will continue to be greatly influenced by this explosion of technology.

What will education be like in the year 2001? Many individuals predict that although colleges and universities will still offer courses in traditional classroom instruction, the home or the office will be the primary adult education center in 18 years from now. Computer assisted instruction, audio and video tapes and discs, multichannel television via satellites, programmed self-instruction cassettes, telecommunications and personal computers are already a reality. What will be the role of graduate and pre-service education with such technology? What will be the role that "distant learning" will play in provision of academic and practicum activities? Distant learning readily lends itself to certain kinds of continuing education. Should the ASHA consider distant learning or self-instruction as a valid procedure in pre-service or pre-professional education? If so, how? If so, when? Should we and will we develop new teaching methodologies to take advantage of the technology?

The reader is probably aware that there have been many books written about various sections of this paper. Unfortunately, it has not been possible to discuss all of the areas worthy of consideration or to fully explain some of those areas mentioned. Suffice it to say that there is no single correct path to follow. Whatever is done will please some and will make others unhappy. The tangled web of overlapping and competing interests must be approached with the cooperation of all educational service providers. We are all aware, but few will publicly admit that promoting or assuring continuing competence is an extremely complex intellectual and volatile political issue. Consideration should be given to arrive at some compromise. Is the leadership of our profession in a position to act as a quasi-mediator among educational service providers or does the leadership of ASHA have its own political interests? It is clear that professional education and training programs must no longer be developed randomly, but must be assembled as a coherent approach to training competent speech-language pathologists and audiologists.

One side of our new double-edged sword is the traditional college and university system who provide the theoretical, the philosophical, the universal principles of practice, and the research. Information is presented by scholars who may not have participated in the clinical arena in many years. This ethereal, tutorial, traditional approach has been the cornerstone of our pre-professional training programs.

The other edge of the sword is the practitioner, the clinician, the individual who participates in the daily problem-solving of clinical questions that often don't fit the text-book cases offered by the university. These individuals are interested in clinical patients, the hands-on approach to educational activities, and the resolution of specific clinical issues. They allege that their best professor is the master clinician - the distinguished practitioner whose experiential knowledge and skills of many years is of paramount importance to their work environment. Unfortunately, many of these individuals fail to recognize the theoretical teachings which made them clinicians. The question is how do we get the best of both possible educational delivery programs? How do we encourage cooperation and mutual participation by scholars and practitioners? How do we or should we prevent the dichotomy that currently exists between college and university professors and practitioners? If we do, what will be the effect on the delivery of education services? If we don't, what will be the effect on the communicatively handicapped?

My personal opinion is that our professional organization - the American Speech-Language-Hearing Association - has the responsibility as well as the expertise to serve as innovator, stimulator, coordinator, and leader in helping to resolve these issues.

Thank you.

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ISSUE IX.

THE CLINICAL RESEARCH BASE OF
SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

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Legitimate Dichotomies or Double-Minded Thinking: Users vs Producers of Research and Basic vs Applied Research

I think that a suitable point of departure for this paper is a comment that Dr. Jerry Tobias made at a meeting of the Task Force on Speech, Language, and Hearing Science (July 28-29, 1978). He said: "ASHA officers and staff members remind themselves fairly frequently that the thing that differentiates our professionals from those in fields like occupational therapy and dental hygiene is that we provide our own research base." I don't know how many ASHA officers and staff members really do remind themselves of that fact, but I think that it is something that all of us should be reminded of. A profession that provides its own research base is much more in charge of its own destiny than a profession that doesn't. Granted that we, like many other professionals, have conflicts over professional territory and prerogatives, it is reassuring that we have a strong investment in the future in the form of vigorous research activity closely identified with the profession. As clinical practice changes, it will change in large part in response to new knowledge gained through research. If the educators who train our professionals are themselves engaged in the research enterprise, then our students are a step closer to tomorrow's knowledge. And, no less importantly, if our practitioners are active users of research, and perhaps generators of research as well, we will enjoy a professional nourishment that is perhaps more important than any other activity in the long run of individual careers and the stake of our profession.

It is tempting to cast a discussion of research into a simple framework in which Master's graduates are viewed as the users of research and Ph.D. graduates are seen as the producers of research. However, this simplistic framework has important exceptions, and failure to recognize these exceptions may lead us into a faulty first step. In the hope of avoiding such a misstep, I will begin with an inquiry into some of the major research issues facing our profession and will postpone for the moment any attempt at identifying users and producers of research.

Another possible misstep is to dwell too long (or perhaps to dwell at all) on the distinction between basic and applied research. However, I think that this issue bears examination, if not on its own merits, then because this issue contains within it, either explicitly or implicitly, a variety of matters that touch on the research foundation of the profession. For example, we might ask: what kinds of research need to be done and who is qualified to undertake these different kinds of research? Further, we might ask: do we need to train different kinds of researchers, and do we need to establish systematic ways of teaching practitioners to be effective users of research?

Just as clinicians and researchers are not mutually exclusive groups, so basic and applied research are not always mutually exclusive nor easily distinguished. Some research that may begin as basic or pure research may turn out to have immediate clinical applications. Similarly, some research that begins as applied investigation may be as theoretically pivotal as basic research projects. I think that the terms basic and applied research are most useful in the sense of being the poles of a continuum.

Helpful discussions of clinical or applied research for speech-language pathology and audiology have been given by Ringel (1972), Costello (1979), and Schiefelbusch (1982). Although each of these discussions is valuable in its own right, I will not consider each in detail but rather address some general issues that underlie the progressive emergence of a kind of research that might be called clinical or applied research.

One of the difficulties in distinguishing basic from applied research is that research in either category (if category is the right word) can take a variety of forms. Schiefelbusch (1982) proposed "four functional research strategies which serve to describe the place of science in our field" (p. 906). Two of these strategies, naturalistic process studies and experimental process studies, were designated as basic science. The other two research strategies, experimental clinical studies and clinical intervention studies, were designated as applied science. Schiefelbusch's discussion of basic vs applied science emphasizes the function of clinical use for the latter, and basic or fundamental processes for the former. He also stated that "the usual direction of research influence is: (1) from natural process studies to either experimental process studies or experimental clinical studies; (2) from experimental processes studies to experimental clinical studies; and (3) from experimental clinical studies to clinical intervention studies. If indeed research strategies follow this general pattern of influence and interaction, then it is extremely important that those researchers who conduct applied science follow carefully the work of those who conduct basic science.

However, even though Schiefelbusch's characterization of the "usual direction of research influence" may well be correct, we must not accept this usual pattern as the standard for scientific development in our field. We need basic scientists who study the work of applied scientists, we need scientists who do both basic and applied research, and we need collaborative research by basic and applied scientists. Schiefelbusch writes to this point as follows:

> ...the importance of clinical research is not important just to validate the products of other scientists. There also should be a clinical research literature available to

> the basic and applied scientists to aid them in the choice of topics to study and in the form that laboratory data should take. (p. 907)

Several writers who make a distinction between basic and applied (clinical) research have mentioned that the two types of research often differ in the evaluation of significance of results. Costello (1979), citing work by Baer, Wolf and Risley (1968), remarked that, "...the results of applied resarch experiments are examined not only by their statistical significance, but by their clinical significance. The yardstick by which the effects of an experiment are judged is whether those effects are large enough, consistent enough, and reliable enough to make an educational or social difference to the subjects." (p. 10). Garfield (1978) elaborated essentially the same idea and urged the recognition that statistical tests of differences are only one of the necessary procedures for the appraisal of experimental results. Results also should be judged with respect to theory, the literature, or common sense. Particularly in studies with large N, a result that is statistically significant may not be significant from the clinical perspective. When N equals 1000, a correlation as low as 0.10 may be highly significant statistically even though it accounts for only 1% of the variance. Statistics are useful but we should not be like those researchers whom Garfield describes as having "been led to worship at the shrine of statistical significance" (p. 600).

Garfield suggests that clinical researchers report several statistics by which experimental results can be judged: predicted variance, means and standard deviations, overlap of distributions, number of subjects who would be correctly diagnosed or classified by the procedures used, and the number of subjects who would be misclassified by these procedures. These statistics are useful especially for studies of clinical diagnosis (which Garfield, p. 596, describes as "research that involves the clinical assessment, diagnosis, comparison, or categorization of individuals being appraised or studied for clinical purposes").

Research on treatment effects may use some of these same statistics but their applicability is diminished with the popular single-case experimental designs, such as the ABAB design in which a comparison is replicated over time, or the multiple-baseline design in which comparison is made across different behaviors (Kazdin, 1978a; Kratochwill, 1978; McReynolds and Kearns, 1982). Single-case designs have their own methodologic and interpretative problems, such as deciding when to change phases or conditions in the experiment, demonstrating that the intervention is implemented, distinguishing alternative treatments from sequence effects, ensuring reliability of the data, and evaluation of the treatment (Kazdin, 1978a). These issues go beyond the scope and intent of this paper, but the last one is particularly deserving of elaboration: how do we evaluate treatment effects? Typically, a reliable effect is determined by visual inspection of the data. Unfortunately, it has been shown that judges can differ considerably when visually evaluating the same data from a single-case design (Jones, Weinrott and Vaught, 1975). Conceivably, two clinicians might draw quite different conclusions from the data of the same single-case experiment. Consideration of this issue raises important problems in evaluating treatment effects and in demonstrating the accountability of speech-language pathology and audiology. It is instructive to consider the two major criteria for evaluating treatment effects: experimental criterion and therapeutic criterion (Kazdin, 1978a, b; Risley, 1970).

The experimental criterion is based on a comparison of behavior during the intervention with what the behavior would have been without such intervention.

This criterion usually is satisfied by replicating treatment effects over time. Practically, this judgment can be made in several ways. One way is to show that there is no overlap of the data between the baseline phase and the intervention phase when the data are plotted over time. Another way is to examine trends in the baseline and intervention conditions. Effective treatment is demonstrated when trends change as the conditions are alternated. Because these methods rely on visual inspection, some effort has been made to develop methods of statistical evaluation (Hayes, 1981; Jones et al., 1977; Kazdin, 1976; Michael, 1974). But the application of statistics must be done with care. Not only is there controversy about the use of statistics in single-case designs (Michael, 1974), but the proper use of these tests often rests on restrictive assumptions that must be considered in the design of the study and the way in which treatment is implemented (Kazdin, 1976).

The therapeutic criterion is based on the value or importance of the treatment effects. Basically, this criterion requires an evaluation of whether the behavior change accomplished during treatment yields improved functioning in the client's everyday situations (Risley, 1970). This criterion is distinct from the experimental criterion in that reliable treatment effects demonstrated by the latter may not satisfy the therapeutic criterion. To take a rather extreme example from Kazdin (1978a), a reduction in self-destructive behavior from 100 to 50 such instances per hour might satisfy a statistical test of the treatment effect but does not satisfy the therapeutic criterion which recognizes that self-destructive behavior of any frequency is maladaptive.

Some progress has been made in the objective assessment of treatment effects. These procedures for determining clinical significance are called social validation (Wolf, 1976) and are based on an evaluation of whether the treatment effects (behavior changes) are clinically important to the client's functioning in his or her social context. The two basic methods of social validation are social comparison and subjective evaluation (Kazdin, 1977). The social comparison method seeks to determine if the client's post-treatment behavior can be distinguished from the normative behavior range of a peer group. The subjective evaluation method involves the evaluation of the client's behavior by individuals who are likely to be in contact with the client.

Some time has been devoted to this discussion because this issue is important to discussions of research training, accountability of clinical service, and conduct of research in our profession. I think that it is important to realize that the mere conduct of applied or clincial research in the form of a single-case experiment does not guarantee clinically significant results, no more than the demonstration of statistical significance in a dissertation study of group performance can be taken as assurance of clinical import. Simply using a single-case design does not make the clinician a competent researcher, nor does it per force yield clinically significant treatment effects. Demonstration of clinical significance is a larger issue.

Another reason to give such emphasis to single-subject experimental designs is that they show promise of becoming a basic tool of the clinician-researcher (Costello, 1979). That is, these designs bring into everyday clinical practice issues such as reliability of observational data (Hartmann, 1977; Hopkins and Hermann, 1977, Kearns, 1981) and choice of time-series design (Kratochwill, 1978; McReynolds and Kearns, 1982). Thus, these designs are a common meeting ground for the producer and user of research. Their potential impact on clinical research is considerable. I believe that single-subject designs and technological innovation are two forces that impact powerfully on any considerations of clinical research, whether from the standpoint of the user or the producer of research, or both of these in the same person.

The Clinician as User and Producer of Research

Because most speech-language pathologists and audiologists are employed in schools, this service environment deserves a close look in considerations of how practitioners use and generate reesearch. There are several reasons why schools can be an active research environment for speech-language pathology and audiology. Laney (1982) discussed some of the advantages that schools offer as a research setting. Among these advantages are

a) awareness of educational issues, programs and services that need to be evaluated,

b) opportunities to identify research topics relevant to the school-aged child,

c) knowledge of school organization and educational policies within which research on school-aged children usually must be conducted,

d) logistic support from aides, teachers, specialists, and administrators,

e) availability of subjects for both experimental and control groups,

f) availability of data on screening, placement, and achievement tests.

Despite the advantages that the school setting offers for the conduct of research, speech language pathologists and audiologists employed in the schools do not appear to be highly active in research (Laney, 1982; Pannbacker and Lott, 1982; Cofey, 1982). Pannbacker noted that the percentage of articles published in Language, Speech, and Hearing Services in Schools (LSHSS) that were authored by school speech-language pathologists and audiologists varied from 0 to 23% for the period 1974 to 1981. For the entire period, school clinicians wrote 26, or 15%, of the 173 published papers.

Several reasons can be given why school clinicians are not more active in research (or at least research that culminates in published reports in journals like LSHSS). Perhaps four of the most important reasons listed by various writers are lack of confidence, lack of rewards, limited training in research methodology, and nonavailability of time (Laney, 1982; Pannbacker and Lott, 1982; Cofey, 1982). Two of these factors are closely related to job definition, that is, the responsibilities assigned to, or expected of, school clinicians. How often does a professional contract in the schools stipulate a percentage of time given to research activities? How often do school clinicians request that research involvement be recognized in their contracts and in their performance evaluations? Research is not likely to be rewarded when it is not expected to be part of a clinician's activities. Nor is the school administrator likely to assist the clinician in arranging time for research if research is not expected from the school clinician. Lack of confidence is probably related to limited research training more than to any other factor, although lack of research support in the school environment also can be a significant factor. Thus, lack of confidence may not be independent of limited research training but may in fact be rooted in it.

As Pannbacker and Lott (1982) observed in their discussion of research by school clinicians, the Certificate of Clinical Competence in Speech-Language Pathology or Audiology does not require academic credit in research, although such credit is acceptable to a maximum of 3 semester hours. Academic credit in research "may be credited to the Basic Communication Processes Area, or one of the Professional Areas or the Related Areas, if substantive content of the course(s) covers material in those areas" (ASHA, 1979, p. 123). The description of what such a course might cover is fairly broad, the basic nature of the course being to "provide an overview of research." Coming under this rubric are courses that offer "introduction to graduate study or introduction to research, that consist primarily of a critical review of research in communciation sciences, disorders, or management thereof, and/or a more general presentation of research procedures and techniques that will permit the clinician to read and evaluate literature critically" (ASHA, 1979, pg. 123). No where in this statement is there any mention of competence in generating research; the emphasis is clearly on the use and evaluation of published research.

The results of the Research Training Survey indicate that both users of research (identified as respondents whose education culminated in a Master's degree) and contributors to research (respondents holding the Ph.D. degree) gave a very high priority to research training. If this research training takes only the form of lectures and discussions of published research, it is doubtful that it would give school clinicians the kind of research experience that equips them with the skills and confidence to initiate or collaborate in research. There is no substitute for actual research experience. However, this research experience may be on the wane rather than the increase, given that few (and perhaps increasingly fewer) academic programs require a Master's thesis.

Changing the job description of school clinicians to include research opportunities and research responsibilities carries many implications, not all of which will be viewed positively by all clinicians. First, clinicians applying for such positions would have to demonstrate their research qualifications. If some portion of paid professional time is to be given to research, then school administrators have the right, indeed obligation, to ensure that clinicians possess the necessary research skills. Second, if research opportunities or responsibilities are written into school clinicians' job descriptions, then school administrators or school boards may come to expect, if not require, a certain degree of research productivity. Third, the conduct of research projects in the school setting presents certain problems, or potential problems, for which the clinician should be prepared. Some clients, or their parents, may not be particularly pleased to think that the speech-language pathologist or audiologist is doing research rather than clinical work. Clients usually attend therapy because they (or the persons responsible for them) desire a clinical service, not participation in research. Some persons may not understand that research does not necessarily place the subjects in a "guinea pig" or at-risk status. A final implication is that a growing research base in the schools will force changes in the academic training programs that prepare clinicians and may cause changes in career development for school clinicians. The problems are not insurmountable, but they do require careful consideration in attempts to facilitate research by school clinicians.

Although these comments have been focused on school clinicians, the same general issues arise with respect to clinicians working in nonschool environments. Clinicians working in medical facilities, community speech and hearing clinics, or in private practice also have many opportunities for research.

These employment settings may become increasingly important for both clinical practice and research as the result of demographic shifts and changing service needs. For example, as the proportion of older persons increases in the general population, there may be greater demands for delivery of services to this group. Clinicians who work in special facilities for the aged are in excellent positions to initiate or collaborate in research on the communicative disorders of these persons.

There are various ways of involving clinicians in research. One important contribution is in the identification of research needs. Perhaps ASHA could facilitate this process by providing a forum in which clinicians can discuss perceived research needs. Some clinicians who are unable or unwilling to undertake the conduct of the research may nonetheless be highly effective in advising others who will conduct the research. Federal research agencies occasionally assemble teams of scientists who identify and describe major research needs within an area. ASHA could organize similar teams, consisting of persons with varying degrees of responsibility in clinical practice, academic teaching, or research. Reports prepared by these teams could be useful not only for communication among members of the Association but also for influencing federal research policies. These reports could help to alert investigators to significant clinical research problems or to clinical implications of various research topics.

The Educational Milieu

Educators have been concerned that we currently face not only a decline in the number of students entering graduate study in the field, but also a decline in the overall qualilty of our students. Counihan (1982) remarked that "The trend toward declining undergraduate enrollments signals a significant drop-off in graduate enrollments over the relatively near term." He also noted that "The relative stability of master's and doctoral enrollments at a time of declining applicant pool suggests an erosion in the quality of student accepted by these programs. It is possible that enrollments are being maintained by reaching deeper into a more shallow applicant pool."

Although valid data on student quality are difficult to obtain, Ringel (1982) voiced alarm with respect to a study conducted for the American Philosophical Association (Herbenick, 1981). This study reported on the Graduate Record Exam scores earned by students comtemplating graduate or professional study in 98 different areas. Audiology, the only area of communicative disorders included in the study, ranked 88th of the 98 fields, coming behind linguistics (26th), psychology (60th), physical therapy (72nd), nursing and occupational therapy (tied for 77th) and sociology (84th). Potential audiologists ranked higher than those intent on study in education, general speech, social work, guidance and counseling, educational administration and physical education. Ringel concluded: "With all due respect to each of the fields ranked, and with recognition that the sample of our students might be small and the distribution somehow skewed, should we not be alarmed at the relatively poor performance of our prospective students?" (p. 402).

A worst-case analysis of the Herbenick study might recognize that not only did potential audiology students rank near the bottom of the 98 fields, but the GRE scores on which the study was based were for the period of 1977-1980, or before some of the recent serious declines in numbers of applications for graduate study in communicative disorders. That is, quality may have slipped even further if we accept Counihan's (1982) interpretation that graduate admissions have become less selective in the interest of maintaining enrollments in the face of diminishing numbers of applicants. To continue with this worst-case analysis for a moment, the possible decline in quality of student may well be accompanied by continuing reductions in federal loans and grants to support graduate study, by a growing inability of training programs to replace obsolete equipment and introduce new technology to their students, and by the ever-present information explosion which places increasingly heavier demands on the responsiveness of students and teachers alike. Some observers have insisted that as economic factors and declining enrollments force some training programs to close their doors, the academically fittest will survive. However, Counihan points to a contrary indication in the Lingwall (1982) report on graduate and undergraduate programs. The fact that enrollment declines were smaller for terminal bachelor's degree programs (which might have been financially attractive to students because of lower fees and tuition) may indicate that factors other than academic quality will select the survivors during a time of attrition. The low salaries that most of our professionals receive do not permit substantial indebtedness to support academic training, and this factor works against the academically excellent but expensive training programs.

The Ph.D. Program: The Ph.D. Holder as Producer and User of Research

The Council of Graduate Schools continues to observe the policy set forth in 1904 by the Association of American Universities that "the Ph.D. degree shall be open as a research degree in all fields of learning, pure and applied." The doctoral dissertation commonly is seen as the culminative training experience of the Ph.D. training program. The dissertation traditionally has served a dual role: the generation of scientific knowledge and the education of scientists. Porter et al., (1982) reported that across several fields of study around 1970, the dissertation consumed 39% of the total FTE time devoted to the degree. Thus, the doctoral dissertation is a highly significant investment of academic training for the Ph.D.

The value of the dissertation has been questioned in some fields of study. Reid (1978) questioned the educational merit of the dissertation in biology. He argued that the standards of evaluation of the dissertation are not uniform, and that the dissertation, even if it is a good one, does not necessarily yield publications. In addition, the form of the dissertation as a long monograph is quite different from the traditional publication in biology, the short article. However, Porter et al. (1982) reported a general satisfaction with the dissertation, even among nonresearch-oriented Ph.D.s and ABDs (all but dissertation). Many of the respondents in this study appreciated the rigor of the dissertation experience and believed "that a research project on the scale of the dissertation teaches respect for the scientific method in a way that nothing else could (Porter et al., 1982, p. 481).

The apparent general satisfaction with the dissertation notwithstanding, Porter et al concluded that "within the framework of Ph.D. education, there may be room for modifications to accommodate better the heterogeneous career paths followed by graduates" (p. 481). The possibilities considered by Porter et al pertained primarily to industrial careers, which are not at this time a major career path for graduates in speech/language pathology, audiology, or speech and hearing science. However, it may behoove graduate training programs in these areas to consider variations in Ph.D. training which could enhance their graduates' preparedness for a changing marketplace, both within and outside academia. One suggestion along this line is increased interdisciplinary education at the graduate level.

Another possibility is training in management or finance. Training in these two areas may benefit the two broad classes of Ph.D.s--the research-oriented and the nonresearch-oriented. Many Ph.D.s in academic, clinical, government, or industrial settings assume management responsibilities, yet little or no portion of graduate training is given to preparation in management, general finance, or (yes) fund raising, Counihan (1982) observed in his keynote address to the National Council of Graduate Programs in Speech Pathology and Audiology that the Ph.D. degree is being used more and more as a credential of advanced clinical training, administrative potential, or doctoral-level clinical supervision. Perhaps some of these functions could be assumed by the clinical doctorate, which is one of the major subjects of this conference. However, even if the clinical doctorate is established in the field of communicative disorders, it is likely that persons with Ph.D. degrees will continue to assume a variety of nonresearch roles. Hence, the alternative degree of a clinical doctorate may not be sufficient reason to forestall changes in academic training leading to the Ph.D. degree.

To be sure, there is a real danger of diluting the Ph.D. degree by adding to the doctoral curriculum academic experiences that detract from the single-minded pursuit of research and scholarship within the discipline. However, a moderate investment of time into nontraditional outside content areas should not be harmful, particularly for those students who seek the Ph.D. degree for nonresearch-oriented career objectives.

Although the dissertation may deservedly remain the centerpiece of graduate education leading to the Ph.D., there may be benefits both to students and our profession if alternative research experiences are permitted under certain circumstances. One such alternative recognizes the systematic or programmatic nature of research: the student conducts several separate studies, each representing a facet of a research problem or a step toward a progressive solution. Each component study would be reviewed by a faculty committee, which also oversees the larger project. This research program could allow the doctoral student to use different methodologies in different component studies, to exercise progressively tighter experimental controls as determined by serial investigations, or to pursue significant or unexpected outcomes of a study. As opposed to the one-shot philosophy of the traditional dissertation, the systematic or serial research project would engage the student and faculty committee in an ongoing research enterprise, the components of which could allow increasing discretion and independence to the student investigator.

One of the concerns expressed in the report of the Research Training Survey was with the narrowness of preparation for scholars in communicative disorders or communicative processes. The report notes that "with the exception of the areas of psychology and linguistics, little support exists among the members sampled to indicate that any of the other outside content areas are either important or essential to the preparation of persons preparing to work in clinical and/or research careers encompassed by the discipline of human communication and its disorders." Although the authors of the report justifiably expressed concern with this evidence of disciplinary narrowness, there is a more sanguine interpretation of the survey results, viz., that because doctoral study in our field is highly individualized, it is unlikely that a number of outside content areas will emerge as important to a majority of respondents. For example, whereas a hearing scientist with interests in auditory physiology may pursue the outside content areas of biomedical and electrical engineering, a speech pathologist interested in aphasia may take outside-the-department coursework in neuroanatomy and neuropsychology. If indeed outside content areas are highly diversified for Ph.D. programs in communication processes and disorders, then it would not be surprising if few of these areas are consistently represented across different specialties. Although some outside content areas (such as psychology and linguistics) are especially likely to be considered important across a broad spectrum of doctoral programs, other outside content areas will be judged important by only a minority of individuals in Ph.D. programs or persons already holding the Ph.D. degree. Nonetheless, outside content areas as an aggregate may be highly valued by most of these persons.

I do not wish to deny concerns about disciplinary narrowness, but only to indicate an interpretive difficulty with the survey results. In fact, I suspect that narrowness is a problem. It afflicts our students and (or because?) it afflicts our teachers. Frequently, students need to be introduced to relevant outside areas either by appropriate advising or by convincing example.

How do we recognize and encourage those Ph.D. students who are likely to make research contributions? Clearly, not all Ph.D. students will. First, let us ask how research-oriented Ph.D. graduates differ from those who are not research oriented.

In a comparison of Ph.D. graduates who reported that research (or research and teaching) was their primary activity versus those graduates who reported "nonresearch" occupations such as teaching or administration, Porter et al. (1982) compiled the following differences between researchers and nonresearchers:

a) researchers received the Ph.D. at a younger age (29.4 versus 31.3 years old),

b) researchers spent less time (1.5 years) earning the Ph.D. after they received the bachelor's degree,

c) researchers spent more time on their dissertations and in their doctoral programs,

d) researchers received more financial aids (fellowships, traineeships, and grants),

e) researchers undertook employment more closely related to their dissertations,

f) researchers pursued the Ph.D. with research as a principal goal.

Ringel (1982) suggested that studies of the personality characteristics of gifted scientists may help us to design academic curricula and field experiences that will shape or nourish the scientific intellect. He summarized these personality characteristics as indicating that gifted scientists are "individualistic, open-minded, freedom-loving, highly motivated, fiercely independent, imaginative, noncomformist, and usually critical of the status quo in their fields of research" (p. 401). I suppose that very similar characteristics apply as well to those gifted in the fine arts and other creative endeavors. But whether these characteristics are unique to the gifted scientist or apply generally to the creative mind, we should indeed give some thought into how we can recognize and encourage these traits in our research training programs.

The Master's Degree Program: Producing and Using Research at the Master's Level

Recalling Bryce Crawford's keynote address at the Highland Park Conference, Counihan (1982) summarized a plan for professional training within the graduate-school framework.

> ...[Crawford] outlined a model of a profession based on a broad liberal undergraduate education, with professional education at the Master's degree level tempered by a substantial emphasis on scholarship and research, and doctoral training keyed to the development of research competency. Placing professional training at the graduate level, he thought, would benefit both the graduate school and the professional program by wedding professional and scholarly education. This model is woven into the Principles and Requirements of the ASHA Certificate of Clinical Competence.

Counihan's re-examination of this "template for graduate education in our profession" pointed up some reasons to doubt its survival. First, he cited survey results (reviewed earlier in this paper) showing that a substantial majority of the ASHA members surveyed did not regard the traditional components of a liberal education, save for the two areas of psychology and linguistics, as relevant or useful to training at the master's degree level. Counihan concluded that this result brings into question the support of the ASHA membership for a broad liberal arts base for professional education. (The contribution of this liberal arts base toward personal fulfillment is of course another matter, but I think that it should not be neglected entirely in our assessments of educational goals and programs.)

A second concern expressed by Counihan was that graduate programs are under pressure to give increased emphasis to professional training at the expense of training in scholarship and research. Signs of the flagging commitment to research include "the relatively limited emphasis on basic-area content in master's degree curricula, the often minimal research content of coursework, and the relatively small number of programs with a thesis requirement." Furthermore, Counihan noted that demands for increased professional training should be viewed in the light that 62% of our master's degree programs have a duration of 18 months or less and that 1 in 5 master's degrees can be completed in one year or less (McLauchlin, 1981). Unless the duration of many master's degree programs is extended, attempts to satisfy demands for additional professional coursework might reduce even further the time given to general scholarship and research training. In short, we may be witnessing the de facto establishment of professional schools within graduate programs.

Of course, professionalism in itself is not a bad thing, but we have to ask if it is feasible to accomplish both professional training and genuine graduate education within master's degree programs spanning only 12-18 months. Moreover, any further erosion of training in research methods and issues at the graduate level surely would make the call for the training of "clinician-researchers" (Costello, 1979) another voice in the wilderness. One begins to feel that our master's degree programs steer as carefully between professional training and traditional graduate education as the sailors of mythology steered between Scylla and Charybdis.

It can be debated whether or not most graduates at the master's degree level should expect to be producers of research sometime in their careers. It is not my purpose to enter into such a debate here. It seems more fruitful to begin with the proposition that master's degree programs must at the least train their graduates to be effective users of research. This goal implies that, at the minimum, (1) these graduates will routinely read the research literature pertinent to their professional activities, (2) they will attempt to incorporate research findings into their clinical practice after suitable consideration of the merits of the research, and (3) they will exercise certain principles of research in the evaluation of their own assessment and management procedures. These are three minimal criteria for the identification of clinician-researchers.

The concept of clinician-researchers is developed further in a paper by Costello (1979) and her paper is a good foundation from which to suggest improvements in research education and the conduct of clinical research. She wrote to the need to train clinician-researchers as follows:

> It would seem important for training institutions to do at least the following at the undergraduate and master's, as well as the doctoral level: (1) teach students to critically and carefully read the speech, language and hearing research literature, especially experimental studies published in relevant journals; (2) develop coursework wherein research methodology (not only statistics) is a central topic; (3) provide faculty models who are a blend of clinical expertise and experimental excellence; (4) involve students in faculty research, especially at a conceptual level; (5) provide opportunities and ready support for student-generated research. (p. 25)

Anyone who proposes to do research surely must be familiar with the pertinent research literature. Thus, we must instill in our students the desire or need to read journals. Ideally, they would be taught to read critically. But critical reading should not be interpreted as a pessimistically inspired search for major and minor flaws in a journal article. Certainly, a degree of skepticism and a demand for carefulness of research are essential ingredients of critical reading. But the reader also should be alert to novel, important ideas, which may or may not be satisfactorily substantiated in a given article. The keen reseacher is quick to recognize insights, some of which may not get much beyond the formulative or speculative stage in a published paper. It is crucial to recognize and examine these insights, for without them, we may spend too much of our research time and resources in replicating and confirming yesterday's conclusions. Replication has a valid place in research, but not at the expense of dulling our enthusiasm for the bold thought, the fresh interpretation, or the unorthodox approach. The researcher should be able to appreciate creativity or innovation not only in his/her own work, but also in the work of others. This appreciation should be cultivated, for there are several forces that place creative, innovate thinking at risk. Ringel's (1982) remarks put this problem into relief:

> In a 1977 NSF supported survey, The State of Academic Science: The Universities in the Nation's Research Effort, it is reported that our nation's research community is engaging in "less speculative science, taking fewer chances, and sticking to established lines of investigation." The report indicates that the situation now seems the same for the established investigator, for the agency program official, and for the graduate student. Playing it safe has become the path of least resistance. (p. 399)

Costello's recommendation for coursework in research methodology, and not only statistics, is well taken. Our students should not come to believe that research is to be equated with statistics. Statistics are indeed a highly serviceable tool of reearch, but statistics are only a tool and one of several. I deplore the fact that Experimental Design often is taken as the title of a course in statistics, for the appropriation of this title carries the suggestion that everything useful in the design of experiments is grasped by selection of the appropriate analysis of variance. But the design of an experiment involves so much more, beginning with the inception of an idea and the examination of that idea with respect to the published literature and continuing through the choice of measurements, composition of control groups, estimation of reliability of measurement, etc. My own experience as editor of The Journal of Speech and Hearing Research convinced me that at least as many failed research projects resulted from errors in research design other than statistics as resulted from misuse or nonuse of statistics. It is a healthy reminder to our students that some of the foremost scientists of our era did not rely on statistics: witness Freud and Darwin. Yes, our students should know something about statistics, but what they learn about statistics should be acquired in a larger context of scientific understanding.

I believe along with Costello that students should have faculty models who are a blend of expertise in the clinic and competence in research. But I think that the need for models doesn't stop there. Students should come to know about individuals who accomplish research while working in nonacademic clinical settings. After all, msot of those who leave academic training with the master's degree, and many others with the Ph.D., will work outside of academia and therefore outside of the research support structure that colleges and universities strive to maintain. Many persons employed principally as speech/language clinicians or audiologists in a clinical setting have made important research contributions. These persons may well be the most appropriate models for the majority of our graduates at the master's degree level, and many others at the Ph.D. level.

The final two suggestions that Costello makes should be self-evident. Students should be given opportunities to participate in, or at least observe, faculty reearch. And, student-generated research should be welcomed and encouraged. If a student's research proposal is faulty or unworkable, the faculty member's effort should be whenever possible toward a constructive redemption of the idea, rather than a flat dismissal of it. Above all, it should be recognized that the most effective training to do research is the actual conduct of research, not just talking about it or reading others' research. Those of us in academic training programs also should consider the very real possibility that lectures, no matter how traditionally convenient they may be as an educational vehicle, are not always the most effective way of reaching our educational goals. In two studies of the relative effectiveness of training methods (Carroll et al. 1972; Newstrom, 1980), the lecture ranked near the bottom of nine training methods in achieving the goals of knowledge acquisition, attitude change, development of problem solving skills, development of interpersonal skills, acceptance by participants, and retention of knowledge. The most effective methods overall across these six educational goals were the case study, the conference, and role playing. Thus, we come to see, as does the reader of Piaget, that intellects learn by doing and acting, and not so much by being told about things.

I would add to Costello's list of recommendations the goal of making our graduates at both the master's and Ph.D. level technologically sophisticated. If our profession is to exploit technological advances, then our clinicians, researchers and clinician-reseachers must be prepared to use current technology and to adapt to technological change. If there is between our clinics and our laboratories a technological abyss, then the prospective user of research will not become an effective user of reearch. Moreover, we may find that other, more technologically adept, professionals will compete for the clients we hope to serve.

I am tempted to say more about the role of technology, but I know that this important topic will be discussed by another presenter. I also am tempted to argue that we should train our graduates to be hungry for continuing education, but this topic too is the meat of another presentation. And I probably have already made more comments than I should on training programs, given that these too are subjects of other papers at this conference. Suffice it to say that education, and continuing education, are keys to the preparation of clinicians who view the integration of current research into clinical practice as a major responsibililty and professional challenge.

Another temptation is to suggest that if we are to train master's degree graduates to be producers of research, then the most realistic goal is to train them to work collaboratively with more experienced researchers, rather than to work independently. But it is these very persons who frequently work in environments that do not permit convenient collaborations with other persons with more research training. Some of our clinicians who seek to be producers of research may very well have to do it independently, with less support than the research-trained Ph.D. holder who may be surrounded by a campus-full of other Ph.D.'s many of whom are eager for collaborative research opportunities. The master's degree graduate who wants to produce research but feels unqualified to do so, is perhaps well-advised to seek appropriate continuing education. Perhaps the research courses that we never seemed able to fit into our master's degree curricula may surface in continuing education! But I will leave this intriguing possibility to Jack Bess (fearing all the while that he in turn will assign it to me as one of my tasks as a member of the Continuing Education Board).

Publications and the Research Mission of the Association

Scientific and technical journals are the medium of communication for both the generator and the user of research. Historically, journals date back to 1665 in Europe and 1839 in the United States. In the United States there are now about 7700 scholarly journals published in all fields. A professional or scientific organization is strongly identified with its journals, and so it is with the American Speech-Language-Hearing Association. The Association currently publishes four periodical journals (including Asha, the "house organ" of the Association) as well as a reports series and a monograph series. The three archival journals intended primarily for scientific communciation and scholarly information related to clinical practice are the Journal of Speech and Hearing Disorders, Journal of Speech and Hearing Research, and Language, Speech, and Hearing Services in Schools. The official publication policy statements for these journals are listed in Appendix I. I include these statements because I believe that the scholarly journals of a discipline or profession are a significant public witness of commitment to research. The journals of ASHA are the archives of our research base and are therefore important to both the producer and user of reearch. Ideally, a profession's journals should contain the essential research information required by the practitioner and should provide for the prompt publication of competently refereed scientific or scholarly papers.

It is not possible for the Association's journals to represent all the different kinds of research needed by different members. The publication policy statements define broadly the kinds of papers that can be considered for publication. The journals make available to the readers a selected body of information. The availability of research information is additionally determined by policies of journal distribution. These policies frequently have come under criticism either because a journal was not automatically available to all members or because members thought that distribution of all journals to all members is too costly. Continuing economic pressures make it likely that calls will again be sounded to reduce the publication costs of the Association. If these calls are answered by any actions that restrict journal distribution or reduce the number of pages printed, then the effectiveness of the Association's research base is diminished. Publication of research reports is vital to both users and producers of research. Our profession will be known by the service we give our clients and by the research we publish in our journals.

Support for Research: The Role of Federal, State, and Private Agencies

The clinical research base of our profession is influenced considerably by the availability of financial support from federal, state and private agencies. Hanson et al. (1980) pointed out that the availability of research funds for communicative disorders depends in part on the number of high-quality applications received by federal agencies. That is, congressional appropriations to an area like communicative disorders are determined partly from a consideration of the number of applications received and the percentage of those applications which is approved but cannot be funded within the current appropriation. Thus, investigators themselves have a stake in overall research support by submitting research grant applications, even if they may not be funded.

This issue bears on the identification of research needs and appropriate commitment of resources to meet those needs. Hanson et al. indicated that the study of communicative disorders is not receiving its entitled share of the federal research dollar:

> Communicative disorders and diseases of the ear, vestibular system, upper airway and larynx affect large numbers of the American population. Research funding does not, at a national level, reflect the magnitude of these problems. (p. 260)

One recommended remedy to this imbalance is more and better research grant applications:

> Research funds are not likely to become more available without objective evidence that there is quality research needing to be done. The best objective evidence is well-designed research grant proposals which have undergone peer review for scientific merit and are recommended for funding. A significantly increased number of approved applications is an effective means of demonstrating the need for increased funds for research. (pp. 260-261)

The implication is that the scientists of our profession need to take a longer view of the research grant process. Although it is not encouraging to receive notice of an approved but unfunded research grant application, proposals in this category may influence future congressional appropriations for research. The number of research proposals also can influence the composition of the study sections or review teams charged with evaluating the scientific merit of proposals. If very few research grant applications are received in a given area, there is little need to include in the peer review group a specialist in that area. Therefore, the few research proposals that are received may not be given thorough and competent evaluations. Submission of research grant applications can have some far-reaching consequences--consequences that go beyond the funding decision on any single application.

A discipline's or profession's research activity also will affect decisions on consulting and advisory appointments. Federal agencies--and other agencies as well--frequently seek the advice of experts within a discipline or profession in identifying research needs. This advice helps to shape reports that are submitted to agency administrators or to congressional appropriations committees.

SUMMARY

A profession that provides its own research base can have considerable control over its own destiny. The American Speech-Language-Hearing Association is committed to support and encourage research, and to aid in the preparation of clinicians who are effective users of research. But several factors now threaten to weaken our clinical research base. Some of these factors are economic, others are the result of long-term developments in our training programs, and others are related to the overall impact of the research enterprise of our profession on federal, state and other agencies, on the career development of our professionals, and on the delivery of services to the public. There is ample reason to doubt that we have succeeded in preparing our clinicians to be effective users of research, let alone occasional producers of research. Furthermore, our professional organization probably has not been nearly as successful as it could be in representing scientists' concerns and in bringing about a symbiotic cooperation between the user and producer of research. We need to train clinician-researchers but not in a way that trivializes the meaning of research. We also need to take steps to insure that clinical research is indeed clinical in the sense of being responsive to the needs of clinicians. Finally, we as a profession must be more diligent in our efforts to make our research publicly visible. What we do in the years ahead must make our clinicians beneficiaries of, if not participants in, the research activities of our profession. We also must redouble our efforts to vitalize our research base. Of course, as this conference will make clear, there are many problems we face, many calls to action on a variety of issues, and many conflicts in the use of our time and energies to solve our problems. It is imperative that we not solve other problems we face, significant though they may be, by taking actions that further sap the strength and impact of our research base. Regrettably, sapping influences already are easy to see.

APPENDIX

The following statements are adopted as the official publications policy statements for the American Speech-Language-Hearing Association periodical journals:

Asha pertains to the professional and administrative activities of speech-language pathology, audiology, and the Association. *Asha* serves as a "house organ." Contributed manuscripts may take the form of articles, special reports, news items, committee reports, reviews of books and materials, and letters. Articles should be of broad professional interest and may be philosophical, conceptual, historical, or synthesizing.

The *Journal of Speech and Hearing Disorders* pertains to the nature and treatment of disordered speech, hearing, and language and to the clinical and supervisory processes by which this treatment [illegible] provided. A major criterion for acceptance of manuscripts is the clinical significance of the subject matter. Contributed manuscripts may take one of three forms: articles, reports, and letters.

The *Journal of Speech and Hearing Research* pertains broadly to studies of the processes and disorders of speech, hearing, and language. Contributed manuscripts may take the form of experimental reports—theoretical, tutorial, or review papers, brief research notes describing a procedure or instrumentation, and letters to the editor.

Language, Speech and Hearing Services in Schools pertains to speech, hearing, and language services for children, particularly in schools. Contributed manuscripts may deal with all aspects of clinical services to children including the nature, assessment, and remediation of speech, hearing, and language disorders, program organization, management and supervision, and scholarly discussion of philosophical issues relating to school programming.

ASHA Reports publishes the proceedings of conferences on speech, hearing, language, or related topics. The conferences are sponsored wholly or partly by the American Speech-Language-Hearing Association.

ASHA Monographs invites manuscripts in the speech, hearing and language sciences, normal and disordered. Manuscripts may be reports of an integrated series of experiments or of complex and extensive projects; they may contain archival data to which other experimenters will return repeatedly; they may bring a particular area of scientific inquiry to a new level of integration; and they may provide the impetus for the development of new directions in research.

General editorial policy: A blind review system is used for all articles for all journals and in addition for reports and letters submitted to the *Journal of Speech and Hearing Disorders*, and no manuscript that has been published or is under consideration elsewhere should be submitted. The Association reserves the right to keep any manuscripts submitted. It cannot assume responsibility for loss of manuscripts.

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ISSUE X:

WHAT STEPS SHOULD WE TAKE TO INSURE THAT GRADUATES ARE ABLE TO USE AND UNDERSTAND ADVANCING TECHNOLOGY FOR CLINICAL SERVICE AND RESEARCH?

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Issue #10
What steps should we take to insure that graduates are able to use and understand advancing technology for clinical service and research?

Background

The study of speech and hearing and its concomitant, that of helping the speech and hearing impaired, stretches back to antiquity. The modern era in speech and hearing science can be traced to two significant, independent inventions that occurred within a year of each other; the invention of the telephone by Alexander Graham Bell in 1876 and the invention of the phonograph by Thomas Alva Edison in 1877. Similarly, the modern era in Audiology can be traced to two related inventions, the audiometer and the hearing aid. Both inventions were offsprings of the telephone. The first one applied instruments and techniques designed for the evaluation of telephone systems to the evaluation of the impaired auditory system. (Fletcher, 1929). The other applied the instrumentation of the telephone to the problem of amplifying sound for the hearing impaired (Watson and Tolan, 1949). The modern era in speech and language pathology can be traced to the development of instrumental techniques for recording and analyzing speech signals (Scripture, 1902). A particularly important, later development was the invention of the sound spectrograph (Potter, Kopp and Green, 1947).

It is significant to note that there was an appreciable delay between the early ground breaking inventions of the telephone and phonograph and the subsequent clinical application of instrumentation derived from these inventions. This was not due to any luck of insight on the part of researchers and clinicians working with the speech and hearing impaired; there were early attempts to use the telephone and phonograph for clinical purposes at a very early stage (Levitt, Pickett and Houde, 1980), but these did not have any appreciable effect on the field until another crucial development had taken place, the mass production of relatively inexpensive telephones and phonographs. Once these instruments, and related instruments using components developed for the telephone and phonograph, were widely available at low cost enormous strides were made in applying this technology to clinical problems.

It is important to bear these developments in mind since we are now faced with a new invention, the digital computer, which appears to be having as much impact on our society, and on our field in particular, as the earlier inventions of the telephone and phonograph. As before, the initial impact of the computer was not widely felt outside of research laboratories and very large organizations that could afford computers. With mass production the cost of computers (and of their components) has gone down and their availability has gone up, in some areas quite dramatically. An important difference between then and now is that the rate of change is greatly accelerated. It took nearly half a century before the telephone became generally available at low cost. It has taken well under half that period for computers to become generally available at low cost. This accelerated rate of change is a critical factor in future planning for our profession.

The areas in which modern technology is affecting our field most profoundly includes both diagnostic aids and prosthetic devices. Significant recent developments in instrumentation include instrumentation for evoked response audiometry, acoustic impedance audiometry, video and audio recording, digital speech analysis, computer-based record keeping and computer-assisted language analysis. Modern prosthetic aids include speech synthesizers for the profoundly speech impaired, augmentative speech aids (e.g., electronic sound source for laryngectomees), non-speech communication systems (e.g., symbol boards), telecommunication devices such as teletypewriters, captioned television, and electronic mail systems, speech-processing aids providing either visual, tactual or low-frequency auditory cues, and the most common prosthetic aid of all, the hearing aid.

In addition to the above, modern technology has also had a profound impact on the education process. Examples include computer-assisted instruction, instructional uses of audio-visual media (e.g., video/audio cassettes, televized lectures, instructional electronic games), speech and audio-training aids, the use of word-processing in the preparation of teaching materials, and the proliferation of personal computers.

The computer or computer-related components (e.g., digital circuits) play a key role in most but not all of the examples cited above. Computers or custom designed digital signal-processing systems are essential for the analysis of signals in evoked response audiometry, large-scale record-keeping, electronic mail, computer-assisted instruction, and word processing. Computers or custom-designed digital signal-processing systems are essential for evoked response audiometry, digital speech analysis (analog devices for speech-analysis are gradually being rendered obsolete), large-scale record keeping, computer-assisted language analysis, speech synthesis systems, computer-assisted instruction, instructional electronic games, word processing and, of course, personal computers. Video and radio media involves technology other than computers, but there is a growing degree of overlap. Modern computers are relying more heavily on sophisticated video displays in communicating with the user (e.g., the touch-sensitive television display) and the use of digital techniques in recording audio and video signals is increasing rapidly.

In short, modern technology is transforming virtually every aspect of our profession (and of every other profession, except perhaps the oldest). It is imperative that a concerted effort be made to train professionals in our field to function effectively in this new environment.

Issues to be Considered

Modern technology, unfortunately, is both complex and amoral. It is wholly unrealistic to develop pre-service and in-service training programs that will cover all aspects of modern technology. There is a need to be selective. For example, one need not understand the principles of xerography in order to use a xerox machine effectively. On the other hand, the characteristics and inherent limitations of acoustic amplifiers need to be understood in order to prescribe hearing aids properly. The following considerations should be taken into account in developing a practical set of guidelines.

i. Fundamental principles need to be understood. The recorders, audiometers, and hearing aids of today involve the same principles of operation as their earliest predecessors. The implementation of these principles, however, has changed dramatically. A course on vacuum-tube amplifiers would not be of much use today, but a course on the properties of amplifiers (gain, internal noise, dynamic range, feedback, impedance matching) is as valid today as it was when the first amplifiers were developed.

ii. Technological change is both predictable and unpredictable. The growing use of computers was predictable immediately after the introduction of the first commercial computer. The current proliferation of electronic games, personal computers, and very inexpensive digital speech-processing systems was not obviously predictable. (If these developments had been predictable, there would not be so many new faces among the major manufacturers of this equipment).

iii) Increased technological sophistication can result in easier rather than more difficult-to-use equipment. The earliest computers were extremely difficult to use. Since then the trend has been towards "friendlier" computers. The BASIC language is easier to use than FORTRAN, which is much easier to use than the earlier languages that were developed. New languages are currently being developed aimed at children (e.g., LOGOS). On the other hand, researchers involved in the development of new computer systems need to learn now how to work with increasingly more complex systems.

iv) Cost and availability are crucial factors. The techniques used in most of the speech-processing devices, telecommunication aids, data storage and word processing systems that are currently transforming our field were developed many years ago, but were initially too expensive to implement on a wide scale. Once it became profitable to mass produce these devices, costs were lowered and availability was increased substantially. Often the factors that make mass production profitable are a result of a piggy-back effect where the major components of the device are needed for a much larger market. A good example is the use of the teletypewriter as a communication aid for the deaf. The teletypewriter was invented at the turn of the century but was not used by the deaf on a wide basis until the mass production of keyboards and related electronics for data-transmission over the telephone were developed for the computer industry, this reduced the cost of the devices to an affordable level for the average deaf user.

v) Practical experience is essential. Proficiency with computers and other sophisticated technological aids are best learned by hands-on experience. There is also no better way to learn the meaning of Murphy's Law until left alone with a computer.

vi.) The tower of Babel has grown to an immense size. It is necessary to have specific terms to describe specific aspects of complex technical systems. Unfortunately, jargon often serves as an effective camouflage for a lack of understanding. Impedance audiometry provids a prime example where a proliferation of unpronouncable terms exist, most of which are not essential to a proper understanding of the topic.

Draft Recommendations (for Discussion)

1. A committee of experts drawn from both within and outside the ranks of ASHA should be convened at regular intervals in order to identify the direction and potential impact of modern technology on our profession.

2. A member of the ASHA central staff should be responsible for facilitating the activities of this committee.

Speed of action is essential given the rapidity of modern technological change.

3. The membership of the committee should be small in order to operate efficiently. In order to guard against the dangers of a systematic bias in the committees decisions, assignments to the committee should follow a carefully designed rotational plan.

4. A key role of the committee would be to identify which aspects of modern technology (which theories, which devices) need to be understood by professionals within our field, and how to provide effective in-service and pre-service training in these areas.

5. ASHA should make an ongoing commitment to implement or to facilitate the implementation of recommendations of the committee.

Specific suggestions regarding steps to be taken in the immediate future are outlined below.

a) Several leading authorities should be invited to present review papers at the next ASHA convention. These reviews should cover the current situation and likely future impact of modern technology in specific areas of interest (e.g., prosthetic aids for the speech impaired, diagnostic and rehabilitative audiology, language analysis).

b) The recommendations of a panel of experts (the initial version of the above-mentioned committee) on what aspects of technology ought to be known by professionals in our field should be published in ASHA as soon as possible.

c) Universities should be encouraged to develop both in-service and pre-service courses covering the recommendations in (b) above. At the same time, short courses should be offered (by invitation, initially) at subsequent ASHA conventions on topics consistent with the recommendations of this panel.

d) Manufacturers and others concerned with the implementation of modern technological aids should be encouraged to provide hands-on demonstrations of new equipment at both regional and national meetings of ASHA. The possibility of jointly sponsoring (with equipment manufacturers) of hands-on short courses should be investigated.

e) A resource center should be established (probably at ASHA, or several regional resource centers) for disseminating information, instructional materials, computer programs, and related materials. These centers may be a convenient avenue for short-courses to provide hands on experience with new instruments and prosthetic aids.

f) An early assignment of the proposed committee should be to make recommendations regarding the standardization of technological systems (e.g., specify preferred languages, computer operating systems).

Terminology that is both simple and precise should also be recommended.

g) Grass roots committees already in existence should be helped and encouraged to expand their activities. An important issue for discussion is the degree of centralization (or decentralization) that should be encouraged.

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APPENDIX G

1983 NATIONAL CONFERENCE

on Undergraduate, Graduate, and Continuing Education

KNOWLEDGE
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1983 NATIONAL CONFERENCE

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ADVISORY COMMITTEE PROFESSIONAL SELF-STUDY PROJECT

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Robert Screen, Ph.D.
Trudy Snope, M.A.
(Project Director)
Mary Lovey Wood, Ph.D.
Phillip A. Yantis, Ph.D.

Trudy L. Snope, M.A.
Conference Coordinator

WELCOME

In 1963 members of the American Speech-Language-Hearing Association gathered in Highland Park, Illinois to determine the needs of graduate education in speech pathology and audiology. The recommendations that issued from that conference greatly affected the development of the profession.

Twenty years have elapsed since the Highland Park Conference. Many changes have taken place: the membership of the Association has grown from 10,000 to 39,000; research findings in our own and related fields have not only increased our knowledge but given us totally new ways of thinking about the subject matter of the discipline; technological advances have provided new opportunities; changes in demography, public policy, laws, and the economy have created new pressures on the delivery of services to persons with communication disorders; the very name of the Association has changed to reflect a new understanding of the entity that defines the profession. The need for a fresh look at our educational practices has been apparent for some time, and with the help from a grant from the United States Department of Education and the support of the Executive Board, a committee of 20 persons has been at work for over two years preparing for this conference.

The theme of the conference is "Knowledge and Service: Products of Education in Human Communication and its Disorders." Our responsibility is an awesome one, for if we perform our task well, our recommendations will have a significant impact on the profession and the population we serve.

Norma S. Rees, Ph.D., Chair
Ad Hoc Committee on National
Self-Study of Undergraduate,
Graduate, and Continuing
Education.

KEYNOTE ADDRESS

Looking Backward and Looking Forward:
Some Views From a Four Decade Window
1:45 p.m. - 2:15 p.m.
Thursday, April 7, 1983

Richard M. Flower, Ph.D.

AGENDA FOR THE 1983 NATIONAL CONFERENCE
On Undergraduate, Graduate, and Continuing Education

THURSDAY, APRIL 7

11:00 a.m. - 1:00 p.m. [illegible]

REGISTRATION

1:00 p.m. - 5:00 p.m. [illegible]

PLENARY SESSION I .... Norma S. Rees, Ph.D., Coordinator

Welcome .... Frederick T. Spahr, Ph.D.

President's Address .... Fred D. Minifie, Ph.D.

History and Charge .... Robert L. Ringel, Ph.D.

KEYNOTE ADDRESS .... Richard M. Flower, Ph.D.

Organization of Conference .... Trudy Snope, M.A.

Presentation of Issues .... Noel D. Matkin, Ph.D., Coordinator

Issue I: .... Robert L. Erickson, Ph.D.
What should be the content and objectives of undergraduate education in communication disorders?

Issue II: .... Kenneth Moll, Ph.D.
What should be the content and objectives of graduate education in communication disorders?

Issue III: .... Roy Koenigsknecht, Ph.D.
What is the need for a professional doctorate in communication disorders?

Issue IV: .... Joel Stark, Ph.D.
How should undergraduate and graduate education in speech-language pathology and audiology interface with other areas of university training?

Issue V: .... Angela Loavenbruck, Ph.D.
How may we better prepare clinicians for the realities of providing services to the communicatively disordered in a variety of settings?

Issue VI: .... Sandra C. Holley, Ph.D.
How may we prepare speech-language pathologists and audiologists for a changing society?

Issue VII: .... Robert L. Douglass, Ph.D.
What should be the role of specialty training in relation to minimum standards for professional preparation in speech-language pathology and audiology?

Issue VIII: .... John C. Bess, Ph.D.
What should be the role of continuing professional education in meeting the full range of needs of faculty, clinical service providers, administrators, and scientists in human communication and its disorders?

Issue IX: .... Raymond D. Kent, Ph.D.
How can we improve the role of research and educate speech-language pathologists and audiologists to be competent users of research?

Issue X: .... Harry Levitt, Ph.D.
What steps should we take to insure that graduates are able to understand advancing technology for clinical service and research?

[illegible]

DINNER On Your Own

[illegible]

CONCURRENT ISSUE CLUSTER DISCUSSIONS

Discussion 1: Five groups each assigned to one of five clusters

FRIDAY, APRIL 8

8:00 a.m. - 10:30 a.m.

CONCURRENT ISSUE CLUSTER DISCUSSIONS (continued)
Discussion 2: Rotation 1

10:30 a.m. - 11:00 a.m. [illegible]

COFFEE AND DANISH

11:00 a.m. - 1:30 p.m.

CONCURRENT ISSUE CLUSTER DISCUSSIONS (continued)
Discussion 3: Rotation 2

1:30 p.m. - 3:00 p.m.

LUNCH On Your Own

3:00 p.m. - 5:30 p.m.

CONCURRENT ISSUE CLUSTER DISCUSSIONS (continued)
Discussion 4: Rotation 3

5:30 p.m. - 7:00 p.m.

DINNER On Your Own

7:00 p.m. - 9:30 p.m.

CONCURRENT ISSUE CLUSTER DISCUSSIONS (continued)
Discussion 5: Rotation 4

SATURDAY, APRIL 9

9:00 a.m. - 11:00 a.m. Town Square Ballroom II

PLENARY SESSION II Coordinator—Noel D. Matkin, Ph.D.
Each of the five cluster facilitators will review the results of the discussions.

11:00 a.m. - 1:00 p.m.

LUNCH On Your Own

1:00 p.m. - 4:00 p.m.

SINGLE ISSUE GROUPS
Each of the ten issue groups will discuss a single issue, summarize and draft resolutions. The presenter of the discussion paper will remain with the issue group.

Issue I	Town Square Ballroom, Section I—Mezzanine Level
Issue II	Town Square Ballroom, Section I—Mezzanine Level
Issue III	Town Square Ballroom, Section II—Mezzanine Level
Issue IV	Town Square Ballroom, Section II—Mezzanine Level
Issue V	Mears Suite—Mezzanine Level
Issue VI	Rice Suite—Mezzanine Level
Issue VII	Irvine Suite—Third Floor Level
Issue VIII	Kellogg Suite—Third Floor Level
Issue IX	Como Suite—Third Floor Level
Issue X	Mounds Suite—Lobby Level

[illegible]

COCKTAIL PARTY
Cash bar and hors d'oeuvres beside the pool

[illegible]

DINNER On Your Own

SUNDAY, APRIL 10

[illegible]

PLENARY SESSION III Coordinator—Norma S. Rees, Ph.D.
Each participant will vote on the resolutions

[illegible]

BREAK

[illegible]

PLENARY SESSION III (continued)

[illegible]

CLOSING REMARKS Norma S. Rees, Ph.D.

Appreciation is extended to the Board of Directors of the American Speech-Language-Hearing Foundation for their financial contribution to the Conference, and to the Minnesota Speech-Language-Hearing Association for assistance with hospitality.

1983 NATIONAL CONFERENCE

on Undergraduate, Graduate and Continuing Education—

Schedule of Events

	Thursday, April 7	Friday, April 8	Saturday, April 9	Sunday, April 10
8:00		Discussion 2: Rotation 1		PLENARY III
9:00			PLENARY II	
10:00		Break		Break
11:00	REGISTRATION	Discussion 3: Rotation 2	LUNCH On Your Own	PLENARY III (cont'd)
12:00				
1:00	PLENARY I	LUNCH On Your Own	SINGLE ISSUE GROUPS	CLOSING
2:00				
3:00	Break PLENARY I (cont'd)	Discussion 4: Rotation 3		
4:00			COCKTAILS	
5:00	DINNER On Your Own	DINNER On Your Own	DINNER On Your Own	
6:00				
7:00	Discussion 1:	Discussion 5: Rotation 4		
8:00				
9:00				
10:00				

American Speech-Language-Hearing Association

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APPENDIX H

1983 NATIONAL CONFERENCE ON UNDERGRADUATE, GRADUATE AND CONTINUING EDUCATION
APRIL 7-10, 1983

BALLOTING BY CONFERENCE PARTICIPANTS ON RESOLUTIONS

Issue I: Under-graduate Education

I-A **WHEREAS**, communication is germane to all human beings, and;

WHEREAS, effective communication is a basic determinant of the quality of human life, and;

WHEREAS, the study of human communication processes is relevant to all helping professionals and;

WHEREAS, disorders of communication affect all aspects of human behavior and;

WHEREAS, students and professionals from many disciplines share in common interests in human communication and its disorders and;

WHEREAS, knowledge and understanding of human communication disorders are consistent with a caring and responsive society; therefore

RESOLVED, that Human Communication Sciences and Disorders constitutes a legitimate discipline within the Arts and Sciences.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
I-A	83	24	1	2	1	0

I-B **WHEREAS**, the professionally effective Human Communication Sciences and Disorders specialist should be, first of all, an educated person, and;

WHEREAS, speech-language pathology and audiology is a human service profession, and;

WHEREAS, the undergraduate preparation of students in Human Communication Sciences and Disorders should have interwoven within its CORE the provision for the understanding of the human condition, and;

WHEREAS, the discipline of Human Communication Sciences and Disorders involves a broad interface with several other disciplines and;

WHEREAS, a career in Human Communication Sciences and Disorders requires that an individual have the skills to identify, analyze and solve problems that are multifaceted, and;

WHEREAS, the undergraduate curriculum for students who wish to pursue a career in Human Communication Sciences and Disorders should include analytical skills, therefore

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

RESOLVED, that undergraduate preparation in Human Communication Sciences and Disorders should include broad educational experiences in areas traditionally recognized as the liberal arts and sciences, with emphasis in the following areas: physical science, biological science, mathematics, social and behavioral science, and the humanities, with a strong foundation in oral and written communication skills.

	100	9	1	1	0	0

I-C **WHEREAS**, a broadly-based Arts and Sciences background and a thorough study of Human Communication Sciences and Disorders is necessary in the preparation of speech-language pathologists and audiologists, and;

WHEREAS, the preparation of such specialists requires an extensive series of observation and practicum experiences, and

WHEREAS, the Human Communication Sciences and Disorders profession has witnessed the accuracy of the 1963 Highland Park Conference observations concerning the need for graduate level work in the preparation of speech-language pathologists and audiologists, and;

WHEREAS, there has been and continues to be a complex and rapidly expanding technology with respect to the assessment and treatment of disorders of human communication, and;

WHEREAS, the breadth and depth of knowledge required for successful education of such specialists cannot be completed in a four-year undergraduate program; therefore

RESOLVED, that the American Speech-Language-Hearing Association reaffirms that the master's degree (or its equivalent) in Human Communication Sciences and Disorders represents the minimal level of academic and clinical preparation for entry into the profession of speech-language pathology and audiology.

I-C	89	16	1	2	1	2

I-D **RESOLVED**, that undergraduate preparation of students in Human Communication Sciences and Disorders should focus on a disciplinary core which includes information in areas such as: anatomic, physiologic, neurologic, psycho-social and physical bases of speech, language and hearing; speech and language acquisition; speech and hearing sciences; language sciences, including phonetics, linguistics, psycholinguistics and sociolinguistics; basic research methodology; and the nature of disorders of speech, language and hearing.

I-D	86	19	1	1	3	1

Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
I-E	**RESOLVED,** that undergraduate education in Human Communication Sciences and Disorders should foster the development of a lifelong commitment to learning and to the search for new knowledge in all fields having significance for the understanding of human communication and its disorders.	95	13	1	1	0	1
I-F	**WHEREAS,** as noted at Highland Park, there is no fundamental dichotomy between the study of normal and abnormal processes, and **WHEREAS,** the study of communication disorders may contribute to the understanding of normal communication processes; therefore, **RESOLVED,** that the undergraduate preparation of students in Human Communication Sciences and Diosorders may provide opportunities for introductory study of the etiology, characteristics, assessment, and mangement of disorders of human communication.	49	37	2	12	10	0
I-G	**WHEREAS,** it is important to acquaint students early with their chosen profession, and **WHEREAS,** it is important to integrate knowledge and its application to clinical problem-solving throughout the students' preparation; therefore **RESOLVED,** that the undergraduate preparation of students in Human Communication Sciences and Disorders may provide opportunities for limited involvement in supervised clinical practicum experience.	40	31	2	27	11	0
I-H	**WHEREAS,** observation is a means of developing the understanding of the processes basic to the discipline of human communication sciences and disorders, and **WHEREAS,** observations increase the possibility of a wide variety of experiences for the student of Human Communication Sciences and Disorders including (1) therapy administered by skilled clinicians, (2) demonstrations by research scientists, and (3) ongoing programs serving both normal and handicapped persons, and **WHEREAS,** observation of a therapy session may become a means of educating the student in regard to research design and data gathering as they relate to a single case study research project, thereby helping to prepare the student to carry out investigative efforts, and						

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

WHEREAS, guided observation would be a means of providing meaningful experiences for related disciplines, thereby encouraging interdisciplinary exchanges; therefore

RESOLVED, that guided observations of normal communication processes, research and clinical intervention procedures with persons who have communicative disorders should be participatory experiences of the undergraduate major in Human Communication Sciences and Disorders.

	42	19	2	17	31	0

I-I **WHEREAS**, it is important to acquaint students early with their chosen profession, and

WHEREAS, it is important to integrate knowledge and its application to practical problem-solving throughout the student's preparation, and

WHEREAS, the undergraduate preparation of students in Human Communication Sciences and Disorders may include limited clinical practicum experiences, and

WHEREAS, a master's degree or its equivalent is regarded as the minimum level of preparation for entry into the profession of speech-language pathology and audiology; therefore

RESOLVED, that the amounts and types of clinical practicum experiences afforded students at the undergraduate level are recognized as elementary and insufficient to qualify the baccalaureate recipient for provision of professional services to persons with communication disorders.

	91	11	0	5	2	2

I-J **WHEREAS**, the education of an undergraduate student in Human Communication Sciences and Disorders requires a substantial number of courses drawn from the broad scientific bases of the Arts and Sciences curriculum along with a substantial number of courses dealing with the social, physical, and cognitive aspects of human behavior, and

WHEREAS, the major in Human Communication Sciences and Disorders requires a substantial number of courses designated as the Human Communication Core integral to the profession as a whole, and

WHEREAS, the student in a Human Communication Sciences and Disorders major must allocate a substantial amount of time to participate in a wide and varied spectrum of guided observation and participatory experiences; therefore

RESOLVED, that courses dealing with direct intervention methods and techniques of remediation of communicative disorders will not be included in the undergraduate curriculum, but will be covered in the graduate curriculum.

	35	18	0	30	28	0

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

I-K **WHEREAS**, excellence in clinical and scientific endeavors within the discipline of Human Communication Sciences and Disorders is dependent upon attracting students with high potential for leadership and achievement; therefore

RESOLVED, that the American Speech-Language-Hearing Association shall develop and implement a program to inform high school and college counselors about the discipline of Human Communication Sciences and Disorders and to encourage counselors to assist in recruiting students with superior academic potential and interests in science and human services; and further

RESOLVED, that the American Speech-Language-Hearing Association develop and implement programs for recruitment of high school students who show promise of superior academic achievement, and further

RESOLVED, that the American Speech-Language-Hearing Association provide leadership, encouragement, and guidance to institutions and programs interested in implementing recruitment and retention programs directed toward such students.

	72	34	2	2	0	1

II: raduate ucation

II-A **WHEREAS**, the American Speech-Language-Hearing Association recognizes the importance of the discipline of human communication to the profession of speech-language pathology and audiology; therefore

RESOLVED, that knowledge of the basic processes of human communication should form a substantial part of the core requirements for speech-language pathologists and audiologists as well as human communication scientists, and further

RESOLVED, that required courses in basic processes of human communication be reflected in the requirements for the Certificate of Clinical Competence.

	90	20	0	1	1	0

II-B **WHEREAS**, the outcome of graduate education in speech-language pathology and audiology should be not technicians but clinicians educated in the logic of the clinical process and problem solving with an understanding of basic research design and basic research procedures

RESOLVED, that course content be evaluated to assure a strong theoretical, scientific base in the education of those involved in providing such clinical management on communication disorders.

	88	22	1	0	1	0

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

II-C **WHEREAS**, instruction involving the development of clinical and research knowledge and skills is best provided by individuals actively involved in those endeavors, therefore

RESOLVED, that all instructional personnel involved in clinical teaching be actively involved in clinical service delivery, and further

RESOLVED, that all people engaged in instruction in research be actively engaged in the conduct of research.

	44	21	0	23	21	2

II-D **WHEREAS**, it is essential that the education of speech-language pathologists and audiologists reflect the state of the art in the field of human communication and its disorders; therefore

RESOLVED, that continuing education be mandated for all instructional personnel participating in the education of students at all levels (undergraduate through doctorate studies).

	44	15	1	21	30	1

II-E **WHEREAS**, the evaluation of a program may benefit from the perspective provided by a member of a different academic discipline; therefore

RESOLVED, that one member of the site visit team for ETB accreditation be from a discipline other than speech-language pathology and audiology and that this individual be from an institution other than the one being visited.

	24	30	7	24	26	1

II-F **WHEREAS**, it is in the best interest of professionals, consumers, and employers for practitioners to be prepared to serve a broad range of individuals with communication disorders; therefore

RESOLVED, education at a Master's degree level should follow preparation in a common core, and focus on the designated areas of practice (speech-language pathology and audiology), and further

RESOLVED, that education should emphasize the preparation of generalists in those designated areas rather than specialists to work either with specific age groups, disorders, or in specific settings.

	69	34	0	7	0	1

II-G **WHEREAS**, current clinical practicum programs may not offer appropriate preparation for professional practice, and;

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

WHEREAS, the planning of clinical practicum experiences may be based only upon requirements in the Certificate of Clinical Competence; therefore

RESOLVED, that alternative models of clinical practicum based on criteria other than a required number of clock hours distributed across specific disorders be investigated.

	48	53	2	5	3	0

II-H **WHEREAS**, Education and Training Board accreditation represents the profession's recognition that an academic program meets both educational and clinical standards for preparing students to enter the practice of speech-language pathology and audiology, and

WHEREAS, there is no assurance that unaccredited academic programs meet such professional standards; therefore

RESOLVED, that the Association shall announce that effective on ____ (date to be specified) only applicants who have completed the majority of their academic preparation and clinical practicum (as defined by the Professional Standards Council) in an Education and Training Board accredited program shall be eligible for earning the certificate of clinical competence.

	30	22	0	21	36	3

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

II-I **WHEREAS**, Professional Services Board accredited clinical programs meet minimal requirements for the delivery of clinical service, and

WHEREAS, students in university educational programs need exposure to, and practicum in, model clinical programs; therefore,

RESOLVED, that a Professional Services Board accredited clinical service facility be a component of each educational program in speech-language pathology and audiology and further

RESOLVED, that no graduating student shall be eligible for clinical certification unless the program from which that person graduates has an on-campus Professional Services Board accredited clinical service facility.

	14	10	0	27	60	0

II-J **WHEREAS**, university-based service clinics frequently do not reflect the mode of practice common to high-quality service delivery programs in speech-language pathology and audiology; therefore,

RESOLVED, that university-based service clinics not serve as the principal clinical practicum setting for students majoring in speech-language pathology or audiology.

	25	23	0	21	42	1

II-K **WHEREAS**, the present Clinical Fellowship Year requirement does not designate the content of the experience, and,

WHEREAS, the scope and adequacy of the experience provided vary widely, and

WHEREAS, neither the educational program nor the profession has a means of evaluating the Clinical Fellowship Year experience; therefore,

RESOLVED, that the profession, in cooperation with education programs and prospective Clinical Fellowship Year sites, develop alternative models for the internship experience and develop procedures for evaluating these various alternatives.

	60	42	3	3	2	2

II-L **WHEREAS**, there are decreased numbers of career investigators in the communicative disor[illegible]s; and

WHEREAS, the ability of our investigators to compete for funds with those in other disciplines is decreasing; and

Resolution Number | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Abstain

WHEREAS, there is a critical need for additional knowledge regarding the nature, prevention, diagnosis, assessment, and treatment of communication disorders; and

WHEREAS, the advances in technological tools and skills required for research have increased, making the training and continuing education and retooling of scientists a more rigorous process than in the past; therefore,

RESOLVED, that a study be undertaken to review the research training programs [illegible] communication disorders, to determine:

[illegible] the ongoing research experiences being provided;
[illegible] the laboratory and technological state of the art in the educational facilities;
3. the level of research activity of the faculty and adequacy of research role models; and
4. the content and tool courses required; and

RESOLVED, that those conducting this evaluation include scientists from such disciplines as communication sciences, neurosciences, experimental psychology, engineering, and linguistics; and

RESOLVED, that the results of the evaluation study be reviewed by a panel of scientists from each of the disciplines above and recommendations made concerning the types of training, facilities, and faculty available and those needed to establish educational programs for preparing career investigators in communication disorders.

38 42 2 12 16 1

II-M **WHEREAS**, the Ph.D. may not offer appropriate opportunities for individuals who pursue careers in the administration, development, clinical research, and delivery of clinical services; therefore,

RESOLVED, that there is a need for advanced studies beyond the master's degree with a different title and with different requirements from those associated with the Doctorate in Philosophy.

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III-A **WHEREAS**, the Ph.D. degree (and its traditional equivalents) is robust enough to accommodate the elements necessary to make it suitable for advanced preparation of service delivery professionals, research scholars, and college/university teachers in the discipline of human communication and its disorders; therefore, RESOLVED, that the Ph.D. be affirmed as the designated doctoral degree for the discipline of human communication and its disorders.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
	62	21	3	15	9	1

III-B **WHEREAS**, the need is recognized for advanced study in human communication and its disorders that emphasizes clinical practice; therefore,

RESOLVED, that a named professional doctorate (e.g., Doctor of Speech-Language Pathology or Doctor of Audiology) be established for the discipline of human communication and its disorders.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
III-B	11	17	6	24	53	0

III-C **WHEREAS**, the discipline of human communication and its disorders and the profession of speech-language pathology and audiology is based on a substantial foundation of research; therefore,

RESOLVED, that scholarly, scientific, and creative components are essential elements in any doctoral program of study in human communication and its disorders.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
III-C	99	8	1	1	2	0

III-D **WHEREAS**, the expanding clinical knowledge base and need for increased clinical practicum and skill cannot be encompassed in the traditional master's level program; therefore,

RESOLVED, that the doctoral degree with a clinical emphasis be designated as the minimum level of academic preparation necessary for delivery of clinical services in audiology.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
III-D	13	14	4	27	53	0

III-E **WHEREAS**, the expanding clinical knowledge base and need for increased clinical practicum and skill cannot be encompassed in the traditional master's level program; therefore,

RESOLVED, that the doctoral degree with clinical emphasis be designated as the minimum level of academic preparation necessary for delivery of clinical services in speech-language pathology.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
III-E	9	7	4	28	62	0

III-F **RESOLVED**, that the American Speech-Language-Hearing Association continue to investigate the desirability, feasibility, and various models of doctoral degrees with clinical emphasis in human communication and its disorders.

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
III-F	34	25	7	12	33	0

	Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
Issue IV: Interfacing Undergraduate and Graduate Education with other Areas of University Training	IV-A	**WHEREAS**, past decades have seen an explosion of interest in human communication and its disorders by many disciplines; and **WHEREAS**, this interest has provided significant opportunities for interaction and growth; therefore, **RESOLVED**, that the discipline of human communication and its disorders strongly encourages a transdisciplinary approach to professional education, service delivery models, and public relations activities.	37	46	4	5	9	10
	IV-B	**RESOLVED**, that the American Speech-Language-Hearing Association promote a variety of professional exchanges between and among educational institutions, service delivery settings, and research centers to broaden education and to promote interchange and cross-fertilization of ideas and practices.	62	39	4	4	2	0
	IV-C	**WHEREAS**, there are many allied disciplines intimately involved in human communication and its disorders; and **WHEREAS**, there are many well-educated, well-trained and productive researchers, clinicians and teachers in these allied disciplines; therefore **RESOLVED**, that the American Speech-Language-Hearing Association encourage allied disciplines to become more active in the education of students and professionals in human communication and its disorders, and further **RESOLVED**, that the American Speech-Language-Hearing Association seek ways to actively promote interfacing of professionals in allied disciplines with those in speech-language pathology and audiology.	54	42	6	3	3	2
	IV-D	**WHEREAS**, confusion has occurred in our communications with other disciplines regarding the nature of our profession; and **WHEREAS**, the American Speech-Language-Hearing Association Ad Hoc Committee on the Single Profession and Its Credentialing has developed definitions and terminology of discipline, profession, core and designated areas of practice of the profession of speech-language pathology and audiology; therefore						

	Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
		RESOLVED, that the American Speech-Language-Hearing Association adopt the definitions and terminology of discipline, profession, core and designated areas of practice of the profession of speech-language pathology and audiology as proposed by the American Speech-Language-Hearing Association Ad Hoc Committee on the Single Profession and Its Credentialing.						
			50	41	4	6	4	5
	IV-E	**RESOLVED**, that the American Speech-Language-Hearing Association promote broad-based curricula (including both a major and a minor) in human communication and its disorders, and further **RESOLVED**, that these curricula include the many bases of communication, e.g. physical, psychological, social, cultural, physiological, linguistic, developmental, studied through normal and/or disordered processes, and further **RESOLVED**, that these curricula include academic, technological, research, and practical experiences in a variety of transdisciplinary settings.						
			25	40	7	13	12	13
	IV-F	**WHEREAS**, there are many disciplines that are providing services which are similar to those that the profession of speech-language pathology and audiology provides; and **WHEREAS**, the training for such disciplines is thorough and well grounded; and **WHEREAS**, at this point in our technological age it is vital to interact with other disciplines; therefore **RESOLVED**, that the American Speech-Language-Hearing Association develop guidelines for enabling professionals in other disciplines to join the Association and to become clinically certified.						
			17	18	0	20	49	6
ssue V: reparing linicians o Provide ervices in Variety f Settings	V-A	**RESOLVED**, that training in administration, management, and marketing is the responsibility of the individual rather than the professional program.						
			36	41	4	14	13	0
	V-B	**RESOLVED**, that professional curriculum in speech-language pathology and audiology include training and practicum experience in administration, management and marketing.						
			10	13	6	44	35	1

Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
V-C	**RESOLVED**, that professional preparation in speech-language pathology and audiology provide counseling and interviewing experiences for students in client and family interactions, and further **RESOLVED**, that counseling and interviewing experiences be provided in transdisciplinary and colleague interactions and cooperative planning.	38	44	4	9	5	9
V-D	**RESOLVED**, that graduates of professional education be prepared to deliver effective speech-language pathology and audiology services to all types of disabilities regardless of the type of setting in which those services are to be delivered.	37	53	0	6	6	7
V-E	**RESOLVED**, that the Association redefine the place and purpose of the clinical fellowship year in the preparation and certification of speech-language pathologists and audiologists.	53	34	8	8	2	4
V-F	**RESOLVED**, that the professional program establish proficiency levels in oral and written skills necessary for effective professional performance and develop mechanisms for assuring that their graduates have attained such levels.	60	29	5	5	9	0
VI-A	**RESOLVED**, that the profession address the communicative needs of underserved populations in the context of a world characterized by demographic, cross-cultural, and societal changes.	61	39	2	7	0	1
Issue VI: Preparing for a Changing Society VI-B	**RESOLVED**, that educators integrate into the coursework the unique aspects of the teaching-learning processes associated with other cultures, regional settings, delivery-of-service settings, and gender differences.	45	45	6	6	7	1
VI-C	**RESOLVED**, that educational programs promote the competent delivery of services to the profoundly hearing impaired population.	54	35	4	5	6	6

Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
VI-D	**RESOLVED,** that academicians and practitioners join in the development of methods for evaluating service outcomes from the perspective of consumers and referral sources in addition to those which are based on internal measures.	39	50	6	8	2	5
VI-E	**RESOLVED,** that the profession explore further possibilities for recruiting and financial assistance to ethnic and cultural minority students in order to prepare for their greater participation in programs related to various underserved populations in our own and other countries.	56	34	6	9	4	1
VI-F	**RESOLVED,** that the profession reassess the need for and value of the Clinical Fellowship Year in relation to the changing needs of the profession and of society.	61	39	4	3	2	1
VI-G	**RESOLVED,** that the American Speech-Language-Hearing Association facilitate growth and development in individuals as academic instructors and as clinical supervisors.	32	46	8	10	5	8
VI-H	**RESOLVED,** that the American Speech-Language-Hearing Association determine effects of supportive personnel and technicians on the economic bases of the profession, on professional preparation, and on the relationship to societal changes.	30	39	11	11	15	3
VI-I	**RESOLVED,** that specific preparation tracks for supportive personnel in speech-language pathology and audiology be developed.	15	14	6	26	45	4
VI-J	**RESOLVED,** that the profession consider alternative learning experiences in professional preparation which provide flexibility in meeting professional standards.	27	31	8	9	16	19
VI-K	**RESOLVED,** that the preparation of students in Communication Sciences and Disorders shall include learning about both normal and abnormal communication behaviors in the aging population and about the role of the professional in research and delivery of services to elderly persons.	55	44	3	2	3	3

<table>
<tr><th>Resolution Number</th><th>Strongly Agree</th><th>Agree</th><th>Neutral</th><th>Disagree</th><th>Strongly Disagree</th><th>Abstain</th></tr>
<tr><td>VI-L</td><td colspan="6">RESOLVED, that the profession has the responsibility to promote the continued development of speech-language pathology and audiology programs in predominately ethnic institutions of higher learning.</td></tr>
<tr><td></td><td>39</td><td>34</td><td>9</td><td>11</td><td>16</td><td>0</td></tr>
<tr><td>VI-M</td><td colspan="6">RESOLVED, that educational preparation of students in communication sciences and disorders include developing an awareness of the interpersonal, cultural, educational, occupational, and economic implications of communication disorders on the individual so affected.</td></tr>
<tr><td></td><td>50</td><td>45</td><td>5</td><td>2</td><td>5</td><td>3</td></tr>
<tr><td>VI-N</td><td colspan="6">RESOLVED, that the American Speech-Language-Hearing Association endorse the principle that all persons in Human Communication Sciences and Disorders shall have a common core of knowledge about human communication (such as audition, anatomy and physiology of speech and hearing, language comprehension and expression, psycholinguistics, etc.) to serve as the basis for professional education and endeavors.</td></tr>
<tr><td></td><td>73</td><td>30</td><td>0</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>VII. pecialty raining
VII-A</td><td colspan="6">WHEREAS, some members of the profession are already specialists; and
WHEREAS, specialization should be based in knowledge; therefore
RESOLVED, that mechanisms be developed to prepare specialists in speech-language pathology and audiology, and further
RESOLVED, that the culmination of this preparation should occur following the completion of general professional education.</td></tr>
<tr><td></td><td>40</td><td>45</td><td>4</td><td>11</td><td>10</td><td>0</td></tr>
<tr><td>VII-B</td><td colspan="6">WHEREAS, the preparation of the general practitioner of speech-language pathology and/or audiology is recognized by the CCC in order to identify these practitioners to communicatively handicapped persons as qualified to provide services to them; and
WHEREAS, speech-language pathologists and/or audiologists often pursue further specialized preparation beyond the general level of preparation in order better to serve particular groups of communicatively handicapped persons; and
WHEREAS, formal recognition of this additional preparation might better serve the communicatively handicapped and the profession; therefore</td></tr>
</table>

<table>
<tr><th>Resolution Number</th><th>Strongly Agree</th><th>Agree</th><th>Neutral</th><th>Disagree</th><th>Strongly Disagree</th><th>Abstain</th></tr>
<tr><td></td><td colspan="6">**RESOLVED**, that the concept of formal recognition for professional specialty preparation is endorsed.</td></tr>
<tr><td></td><td>26</td><td>39</td><td>2</td><td>23</td><td>19</td><td>1</td></tr>
<tr><td>VII-C</td><td colspan="6">**WHEREAS**, the Specialty Certification Subcommittee of the Council on Professional Standards in Speech-Language Pathology and Audiology has developed a plan for specialty certification, and
WHEREAS, the Legislative Council of the American Speech-Language-Hearing Association has asked for input from the Conference; therefore,
RESOLVED, that the participants of this conference accept in detail the recommendations of the Subcommittee on Specialty Certification.</td></tr>
<tr><td></td><td>3</td><td>10</td><td>5</td><td>50</td><td>39</td><td>3</td></tr>
<tr><td>VII-D</td><td colspan="6">**WHEREAS**, the Specialty Certification Subcommittee of the Council on Professional Standards in Speech-Language Pathology and Audiology has developed a plan for specialty certification; and
WHEREAS, the Legislative Council of the American Speech-Language-Hearing Association has asked for input from this conference; therefore,
RESOLVED, that the participants of this conference accept in principle the recommendations of the Subcommittee on Specialty Certification.</td></tr>
<tr><td></td><td>17</td><td>41</td><td>3</td><td>23</td><td>20</td><td>6</td></tr>
<tr><td>VII-E</td><td colspan="6">**RESOLVED**, that any plan adopted for specialty recognition focus on disorder areas rather than on professional settings.</td></tr>
<tr><td></td><td>50</td><td>39</td><td>5</td><td>10</td><td>4</td><td>3</td></tr>
<tr><td>VII-F</td><td colspan="6">**RESOLVED**, that any plan for specialty recognition acknowledge continuing education as a primary vehicle in developing specialty skills.</td></tr>
<tr><td></td><td>38</td><td>46</td><td>6</td><td>9</td><td>8</td><td>2</td></tr>
<tr><td>VII-G</td><td colspan="6">**RESOLVED**, that any plan for specialty recognition include evaluation of clinical competencies in the specific area.</td></tr>
<tr><td></td><td>44</td><td>43</td><td>4</td><td>10</td><td>7</td><td>2</td></tr>
<tr><td>VII-H</td><td colspan="6">**WHEREAS**, the development and administration of a specialty recognition program could be established by the national professional organization (American Speech-Language-Hearing Association) or by specific related professional organizations; therefore,</td></tr>
</table>

	Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
		RESOLVED, that any plan adopted for specialty recognition should be formulated and maintained within the standards programs of the American Speech-Language-Hearing Association.	41	40	6	12	7	4
	VII-I	**WHEREAS**, any specialty recognition program could result in various modes of applicant recognition; therefore, **RESOLVED**, that any plan adopted for specialty recognition should incorporate some form of formal credentialing.	24	32	4	20	26	4
Issue VIII: Continuing Education	VIII-A	**RESOLVED**, that continuing education should not replace knowledge critical to academic education, and further **RESOLVED**, that continuing education should amplify and augment one's academic studies as continuous education throughout one's professional career.	91	18	1	0	0	0
	VIII-B	**RESOLVED**, that continuing education is an appropriate forum for the presentation of emerging knowledge and information prior to the incorporation of such knowledge and information in university curricula.	35	34	2	14	17	8
	VIII-C	**RESOLVED**, that in addition to traditional methods for obtaining continuing education credits, creative and innovative methods, including experiential learning, also be recognized for credit.	48	39	4	4	14	1
	VIII-D	**RESOLVED**, that the American Speech-Language-Hearing Association should develop strategies in the use of current technology to provide continuing education to the professional for whom it is less accessible.	63	38	3	3	2	1
	VIII-E	**RESOLVED**, that the American Speech-Language-Hearing Association be charged with the development and implementation of a study to investigate the effectiveness of continuing education on the service outcomes of speech-language pathology and audiology.	39	28	4	25	13	1

Resolution Number		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
VIII-F	**RESOLVED**, that the American Speech-Language-Hearing Association support the concept of a mandatory program of continuing education as a commitment to lifelong learning.	33	22	2	18	33	1
VIII-G	**RESOLVED**, that the American Speech-Language-Hearing Association should implement a mandatory program of continuing education to recertify holders of the Certificate of Clinical Competence.	17	15	0	31	46	1
VIII-H	**RESOLVED**, that the American Speech-Language-Hearing Association should implement a mandatory program of continuing education to maintain membership.	7	8	4	28	62	0
VIII-I	**RESOLVED**, that the American Speech-Language-Hearing Association reaffirm its position on voluntary continuing education as a commitment to lifelong learning.	62	18	2	18	6	3
sue IX: le of search IX-A	**WHEREAS**, effective problem solving is basic to both clinical and research processes, and **WHEREAS**, experience in effective problem solving should be included at all levels of education, clinical practice, and research activity, and **WHEREAS**, the current standards for the Clinical Fellowship Year need study and revision; therefore, **RESOLVED**, that research experience be recognized as an acceptable component of the Clinical Fellowship Year experience.	35	45	1	17	11	2
IX-B	**WHEREAS**, the 1983 National Conference on Undergraduate, Graduate and Continuing Education identified a commitment to incorporate an attitude of critical thinking and a research philosophy into all phases of the educational process, including undergraduate, graduate and continuing education in communication sciences and disorders; therefore, **RESOLVED**, that a thesis or publishable research paper be a requirement for a Master's degree or an equivalent degree accepted for the awarding of the Certificate of Clinical Competence in Speech-Language Pathology and Audiology.	21	19	2	32	36	0

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
IX-C **WHEREAS**, the development of research interests in students is best fostered in an educational atmosphere in which faculty actively pursue research; therefore, **RESOLVED**, that educational programs be encouraged to appoint faculty members with strong research commitments without regard to their certification status.	55	39	1	12	4	0
IX-D **WHEREAS**, a number of diagnostic instruments and therapeutic programs have been developed, and **WHEREAS**, many have been disseminated without sufficient documentation and evaluation; therefore. **RESOLVED**, that the American Speech-Language-Hearing Association establish guidelines comparable in quality to American Psychological Association guidelines for evaluation of diagnostic instruments and therapeutic programs and that the developers of these instruments seek evaluation of them prior to their dissemination.	49	27	2	13	16	4
IX-E **RESOLVED**, that the American Speech-Language-Hearing Association recognize the importance of research to our Association by creating the office of Vice President for Research whose responsibilities would be to monitor and encourage research functions within our discipline.	21	17	6	32	32	3
IX-F **RESOLVED**, that the American Speech-Language-Hearing Association study and develop appropriate new programs to encourage research in human communication sciences and disorders in public school settings.	24	59	5	14	8	1
IX-G **WHEREAS**, various social and economic factors threaten to weaken the research enterprise in the area of human communication sciences and disorders; therefore **RESOLVED**, that the American Speech-Language-Hearing Association develop additional programs to encourage and support research careers in the study of human communication sciences and disorders.	56	34	6	10	5	0

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

IX-H **WHEREAS**, Federal and foundation funding is vital to the maintenance of the continuing research activities of American Speech-Language-Hearing Association members; and

WHEREAS, there are few American Speech-Language-Hearing Association members among the review committees of funding agencies; therefore,

RESOLVED, that the Committee on Scientific Affairs prepare a roster of appropriate nominees for review positions, and further

RESOLVED, that the National Office bring a representative list of appropriate reviewers to the attention of the funding agencies.

	48	38	3	9	11	2

IX-I **RESOLVED**, that the Association strengthen its commitment to basic research and encourage collaboration between the profession of Human Communication Sciences and Disorders (HCSD) and related sciences.

	62	46	1	1	0	0

IX-J **WHEREAS**, the American Speech-Language-Hearing Association recognizes the need to increase knowledge of communication disorders; and

WHEREAS, research experience is more likely to stimulate career interest in research as well as ability to apply newly generated information to the provision of clinical services; and

WHEREAS, the ability to apply technology to both research and provision of services is best achieved by experience with state of the art technology; therefore

RESOLVED, that standards for accreditation of education programs include requirements for the establishment and maintenance of clinical and research laboratory facilities.

	42	34	2	18	15	0

IX-K **WHEREAS**, the service provider functions as a role model; and

WHEREAS, the service provider should be involved in the conduct of investigative activity; therefore

RESOLVED, that standards for accreditation of professional service facilities specify that the professional staff be engaged in the conduct of investigative activity.

	16	20	5	27	39	4

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain
IX-L **RESOLVED**, that a limited number of research articles published in our professional journals close with a brief addendum presenting potential clinical implications and applications of the findings.	32	38	2	14	21	3
IX-M **WHEREAS**, an understanding of the research and scholarly enterprise is essential for both the use and generation of research; and **WHEREAS**, all members of the discipline of human communication sciences and disorders must be familiar with the research process; therefore **RESOLVED**, that the requirement for the Certificates of Clinical Competence in speech-language pathology and audiology include a minimum of 6 semester hours of credit in direct research endeavors and/or coursework in the methods of philosophy of science.	30	27	5	26	20	2
IX-N **RESOLVED**, that our profession strongly reaffirm its commitment to the development of an attitude of critical thinking and an understanding of research philosophy as appropriate to the educational process in communication sciences and disorders.	84	21	5	0	1	0
IX-O **WHEREAS**, the processes and products of scholarly research are essential; and **WHEREAS**, clinical competence involves decision-making and precise validation of procedures; therefore **RESOLVED**, that certification standards be revised to reflect competence in research.	23	32	3	27	23	3
IX-P **WHEREAS**, either clinical or nonclinical career paths may be followed by students of human communication sciences and disorders; and **WHEREAS**, it is important to encourage entrance into research careers in communication sciences and disorders; therefore **RESOLVED**, that educational programs be encouraged to provide curricula for the study of the discipline of human communication sciences and disorders at all academic levels.	54	30	5	3	8	11

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

Issue X:
Advancing
Technology

X-A **WHEREAS**, recent developments in the areas of computers and advanced technology have influenced the discipline and profession of communication sciences and disorders, and

WHEREAS, the developments are sufficiently global to influence the conceptualization of problems as well as the identification of solutions, and

WHEREAS, there exists great diversity in available computer hardware and software, and

WHEREAS, a working knowledge of computers, computer applications, and advanced technology is no longer optional to the pursuit of the instructional, scientific and clinical concerns of the field, and

WHEREAS, there exists significant diversity in the knowledge of computers and advanced technology possessed by practitioners of communication sciences and disorders, therefore

RESOLVED, that the American Speech-Language-Hearing Association establish a Committee on Computers and Advanced Technology responsible to the Vice President for Education and Scientific Affairs, and further

RESOLVED, that the committee be charged

1. to identify potential directions and impacts of computers and advanced technology on the disciplines and profession of communication sciences and disorders; and
2. to consider, recommend and promote methods for informing members of the Association of developments in these areas; and
3. to consider and recommend computer operating systems and languages for instructional, scientific and clinical application.

X-A	75	23	2	4	6	0

X-B **RESOLVED**, that the American Speech-Language-Hearing Association apply maximum effort through the use of conventions, regional meetings, workshops and publications to enhance development of understanding, acceptance and application of advanced technology by students, faculty, and practitioners.

X-B	73	35	0	1	1	0

X-C **RESOLVED**, that educational programs in Human Communication Sciences and Disorders implement laboratory experiences involving computers, software, and other forms of advanced technology for students at all levels of their education, including critical evaluation of the technology, and

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

RESOLVED, that since sources from which these technological developments emanate have a direct bearing on their usefulness to the practitioner/scientist, those technologies developed commercially must be critically evaluated for appropriateness to our field, and

RESOLVED, that levels of expected technological competence be compatible with the student's career goals.

	40	46	3	7	4	10

X-D **WHEREAS**, the American Speech-Language-Hearing Association has a continuing education program, and

WHEREAS, the continuing education program should be responsive to the individual and collective needs of the membership; and

WHEREAS, there is an identifiable segment of the membership which has stated its current, pressing need for continuing education in advanced technology, therefore

RESOLVED, that the American Speech-Language-Hearing Association include in its Continuing Education program, courses in the application of advanced technology to the study and treatment of human communication sciences and/or its disorders, and further be it

RESOLVED, that such experiences shall be eligible for CEU credits.

	67	37	2	1	1	2

X-E **RESOLVED**, that the Professional Standards Council of the American Speech-Language-Hearing Association develop appropriate standards for the educational preparation, professional service and clinical certification pertinent to the use of advanced technology in the field of human communication sciences and disorders.

	20	34	2	31	18	5

X-F **RESOLVED**, that the American Speech-Language-Hearing Association National Office shall facilitate the application and use of advanced technology in the field of human communication sciences and disorders by

1. maintaining an instrumentation and software registry,
2. maintaining a list of consultants to provide information on the implementation and utilization of advanced technology for professional groups and institutions focusing on human communication and its disorders, and

Resolution Number	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Abstain

3. setting up a mechanism for evaluating clinical and educational applications of technology, including computer software.

	32	34	3	27	12	2

X-G **WHEREAS**, there is interest in the selection and retention of quality students to our field, and

WHEREAS, there can be identifiable groups of students to whom we might appropriately address our recruitment efforts,

RESOLVED, that recruitment efforts be directed to talented and interested students who have background in the liberal arts, the sciences, and in technological fields and computer sciences.

	48	51	4	4	2	1

X-H **WHEREAS**, there has been a recent explosion in advanced technology which has application to the discipline and profession of human communication sciences and disorders, and

WHEREAS, much of the knowledge and expertise in the development and application of advanced technology resides in other disciplines, scientific societies, and professional associations, and

WHEREAS, there is a need for sharing information and expertise among the members of the American Speech-Language-Hearing Association and members of groups with expertise in advanced technologies, therefore be it

RESOLVED, that the American Speech-Language-Hearing Association seek to establish liaisons with scientific societies and professional associations with knowledge and expertise in the development and application of advanced technology, and be it further

RESOLVED, that the American Speech-Language-Hearing Association seek to involve those with expertise in advanced technologies in its activities and programs.

	53	49	4	4	0	0

X-I **WHEREAS**, efficiency of research effort is aided immeasurably by advanced technology,

RESOLVED, that the technological competencies of those students with a career goal of scholar researcher be of the highest level, that is, scholar/researchers may be looked to as one of the primary sources of technological ideas and development.

	31	37	10	12	11	8

APPENDIX I

NATIONAL CONFERENCE ON UNDERGRADUATE, GRADUATE, AND CONTINUING EDUCATION

April 7-10, 1983
Conference Evaluation

I. Please circle the words which best describe your degree of agreement with each statement. Thank you for your thoughtful response.

A. Conference Organization

1. The Conference issues were clear and appropriate.

	3.8%		56.6%	39.6%
strongly disagree	disagree	neutral	agree	strongly agree

2. The objectives of the Conference were met.

	5.8%	7.7%	50%	36.5%
strongly disagree	disagree	neutral	agree	strongly agree

3. The material prepared for the participants was helpful.

			15.1%	84.9%
strongly disagree	disagree	neutral	agree	strongly agree

4. The organization of the conference was clear.

			11.3%	88.7%
strongly disagree	disagree	neutral	agree	strongly agree

The Project Director Should be Commended

B. Conference Presentations

1. The content of the Conference presentations was applicable.

			50.9%	49.1%
strongly disagree	disagree	neutral	agree	strongly agree

2. The Conference presentations were effective.

	1.9%	3.8%	52.8%	41.5%
strongly disagree	disagree	neutral	agree	strongly agree

(continued on other side)

C. Group Discussions

1. The facilitator was effective in leading the small group discussions.

varied from facilitator to facilitator

strongly disagree	disagree	neutral	agree	strongly agree
	14%	4.%	58%	24%

2. The contributions of the other participants were helpful.

strongly disagree	disagree	neutral	agree	strongly agree
	3.8%		40.4%	55.8%

3. I felt I was able to make my contributions to the Conference.

strongly disagree	disagree	neutral	agree	strongly agree
			66%	34%

II. General Comments

A. What aspects of the Conference were particularly beneficial?

See Attached

B. What aspects of the Conference would you change?

See Attached

C. Overall, I think the Conference was successful.
(Circle One) Yes No Uncertain

See Attached

Why?

A. What aspects of the Conference were particularly beneficial (in order from most to least number of comments)

1. The well-organized cluster discussions provided an opportunity for maximal interactions and free discussion with other participants with opportunity to hear other views on challenging questions from lots of different perspectives, backgrounds, experiences as well as the opportunity for maximal expression. The rotations were a great way to get to exchange ideas with everyone.

2. Hearing the viewpoints and ideas of other professionals representing a broad spectrum of concerns.

3. Initial paper presentations and opportunities to discuss with preparers of papers.

4. The organization of the conference was extraordinarily well done.

   The structure of the conference created an environment which allowed optimal learning experience while in the process of producing thoughtful and appropriate resolutions.

5. Sufficient opportunity to discuss all the issues.

6. Opportunity to interact and discuss with others.

7. Prior distribution of discussion papers and other information.

8. The efforts to prepare resolutions in the resolution writing session.

9. Overall facilitators were good and demonstrated good facilitative skills. The free exchange of ideas made new perspectives. Research and continuing education groups were most beneficial. Special thanks to Freeman, Carney, and Glattke.

10. The mental stimulation provided by the interaction of participants.

11. The number of participants was just right.

12. The opportunity to expand thinking into a variety of areas.

13. Single location of all functions.

14. Rapid zeroxing.

15. The whole thing.

3. What aspects of the Conference would you change? (in order from most to least number of comments)

   1. Allow for longer time to develop, peruse and debate the resolutions before voting on them.

   2. Shorten the initial cluster group time periods.

   3. Wish it had been longer.

   4. While facilitators did an excellent job, I would have appreciated non-involved facilitators who were skilled in group process and resolution writing. The best facilitator was Gilmore.

   5. Have recorders record visibly in cluster groups (as did Ted Glattke in research cluster).

   6. Reduce the number of resolutions; do not read them. Some resolutions were ommitted without explanation.

   7. Less rigorous time on Friday .

   8. Need more participants from schools, hospitals, minority groups and rural areas.

   9. Number of people in small groups was too large.

   10. Women were noticeably absent.

   11. Some discussion papers were weak; they were a presentation or what we already read.

C. Overall, I think the Conference was successful.

Yes (83.3%)

Why?

Well conceived, well planned, well organized and well executed by those responsible for the conference.

Rees + Snope = Excellent

Leadership

The intense interest shown by the invited participants who represented a diverse group of professionals to consider issues facing the association.

The facilitators performed a difficult task well. Carney + Glattke were especially effective in facilitating comments.

Opportunity for lots of participation with absence of "I know more than" and respect for the young professional present as well as the "known leaders".

Resulted in clear definition of issues confronting the profession.

We have accomplished resolutions which will effect change.

Excellent selection of participants - good representative sample.

The enthusiasm and information disseminated in the assembly of leaders.

It accomplished its purposes. Identified policy that prior to the Conference was assumed.

SUPER!

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2. Uncertain (14.6%)

Why?

There was much traditional thinking and rediscussion of old issues. I don't think we were prepared to be innovative which is not a criticism of the project director or the organizing committee, but we spent too much time talking to ourselves. There was a strong "old boy" network operating. When will we confront the hard issues of program survival, societal trends, economic realities, new models?

The attempt was to obtain the "pulse of the Association" regarding the pertinent issues relating to knowledge and service. Unfortunately, the resolutions generated may be so vague as to prevent coherent and strong directional statements.

Also there appeared a lack of representation (interest?) by those professionals involved in service delivery. The "future of the profession" is well explored but somewhat down played after educational processing. This conference seemed to discount "life after education."

The source of issues (the self-study survey) was such that some highly relevant issues either were not raised or were not appropriately emphasized, e.g., the distinction.

3. No (2.1%)

Did not like the format. I believe it may have exposed opinion but no fact. It was not really solution oriented.